



HDTV DIGITAL VIDEO RECORDER / RECEIVER (HD DVR) OWNER'S MANUAL

MODEL : LST-3410A



Before connecting, operating or adjusting this product,
please read this owner's manual carefully and completely.



As an ENERGY STAR® Partner, LG has determined that this product or product models meets the ENERGY STAR® guidelines for energy efficiency.

ENERGY STAR® is a U.S. registered mark.

Safety Precautions



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO QUALIFIED SERVICE PERSONNEL.



THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

WARNING: Do not install this equipment in a confined space such as a bookcase or similar unit.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT AND FULLY INSERT.

ATTENTION: POUR ÉVITER LES CHOC ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

NOTE TO CABLE/TV INSTALLER

This reminder is provided to call the cable TV system installer's attention to Article 820-40 of the National Electric Code (U.S.A.). The code provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.

REGULATORY INFORMATION: FCC Part 15

This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a residential installation. This product generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the product and receiver.
- Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

COMPLIANCE: The responsible party for this product's compliance is:

Zenith Electronics Corporation, 2000 Millbrook Drive, Lincolnshire, IL, 60069, USA Phone: 1-847-941-8000

CAUTION

DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANY WAY WITHOUT WRITTEN AUTHORIZATION FROM LG ELECTRONICS CORPORATION. UNAUTHORIZED MODIFICATION COULD VOID THE USER'S AUTHORITY TO OPERATE THIS PRODUCT. THIS EQUIPMENT IS INTENDED TO RECEIVE AND DECODE SIGNALS TRANSMITTED ACCORDING TO ATSC DIGITAL TELEVISION STANDARD A/53, SPECIFICATION AND IS INTENDED TO BE USED WITH AN APPROPRIATE ANTENNA AND DISPLAY DEVICE THAT YOU MUST PROVIDE.

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- Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

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Setup Checklist

1. **Unpack HD DVR and all accessories.**
2. **Connect your HD DVR to antenna and TV/Monitor.**
See pages 11 - 15.
3. **Connect all external video and audio equipment.**
See pages 16 - 22.
4. **Install batteries in remote control.**
See page 10.
5. **Plug TV and source equipment into power outlets.**
6. **Turn HD DVR on.**
7. **Choose on screen menu language.**
See page 34. (English is selected.)
8. **Set up TV Guide On Screen™.**
See page 54.
8. **Use EZ Scan* to search for all channels in your area.**
See page 28.
9. **Turn video source equipment on.**
10. **Select viewing source for HD DVR.**
See pages 30.
11. **Fine-tune source image and sound to personal preference or as required by source.**
See pages 26 and 29.
12. **Additional features Setup**
See Table of Contents.

* EZ Scan/Channel Search Notes -Available Channels/Active Channels/DTV Channels

EZ Scan finds channels which have a signal present and are actively being broadcast. Some broadcasters do not provide or send or broadcast a signal continuously. As a result, some DTV channels may not be found with EZ Scan. If you know that there is a DTV channel that was not found by EZ Scan, run EZ Scan again; when the DTV channel is actually sending out a program.

About the symbols used in this manual



Indicates hazards likely to cause harm to the unit itself or other material damage.



Indicates special operating features of this unit.



Indicates tips and hints for making the task easier.

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REFERENCE

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Front Panel Controls

Arrow Buttons (▲ / ▼ / ◀ / ▶)

Navigate on-screen menus and adjust system settings and preferences. Use the arrow keys to move to a menu option and then use the SELECT button to access it. If no menu is displayed, the LEFT/RIGHT arrows control the volume setting and the UP/DOWN arrows select channels.

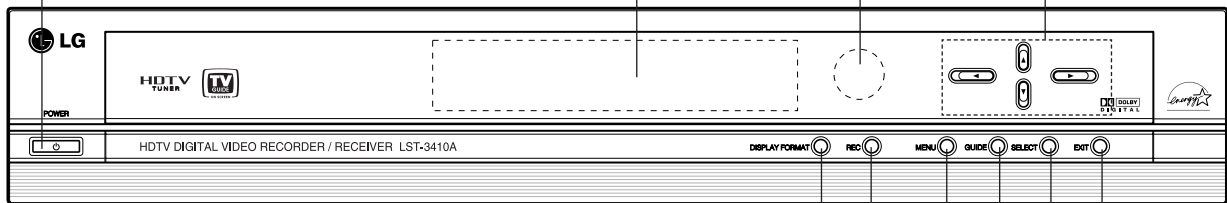
Power

Turns the HD DVR on and off.

Remote Control Sensor

Receives signals from the remote control.

Display Window



DISPLAY FORMAT

Sets the output resolution to 1080i, 720p, 480p, or 480i formats and chooses the correct display format for your TV. (Refer to page 23.)

RECORD

Activates Instant Timer Recording. To stop recording, press the button again.

MENU

Shows the main menu on the screen. You can return to normal viewing by pressing the EXIT button.

GUIDE

Shows station and program information on the screen. To remove the banner, press the button again.

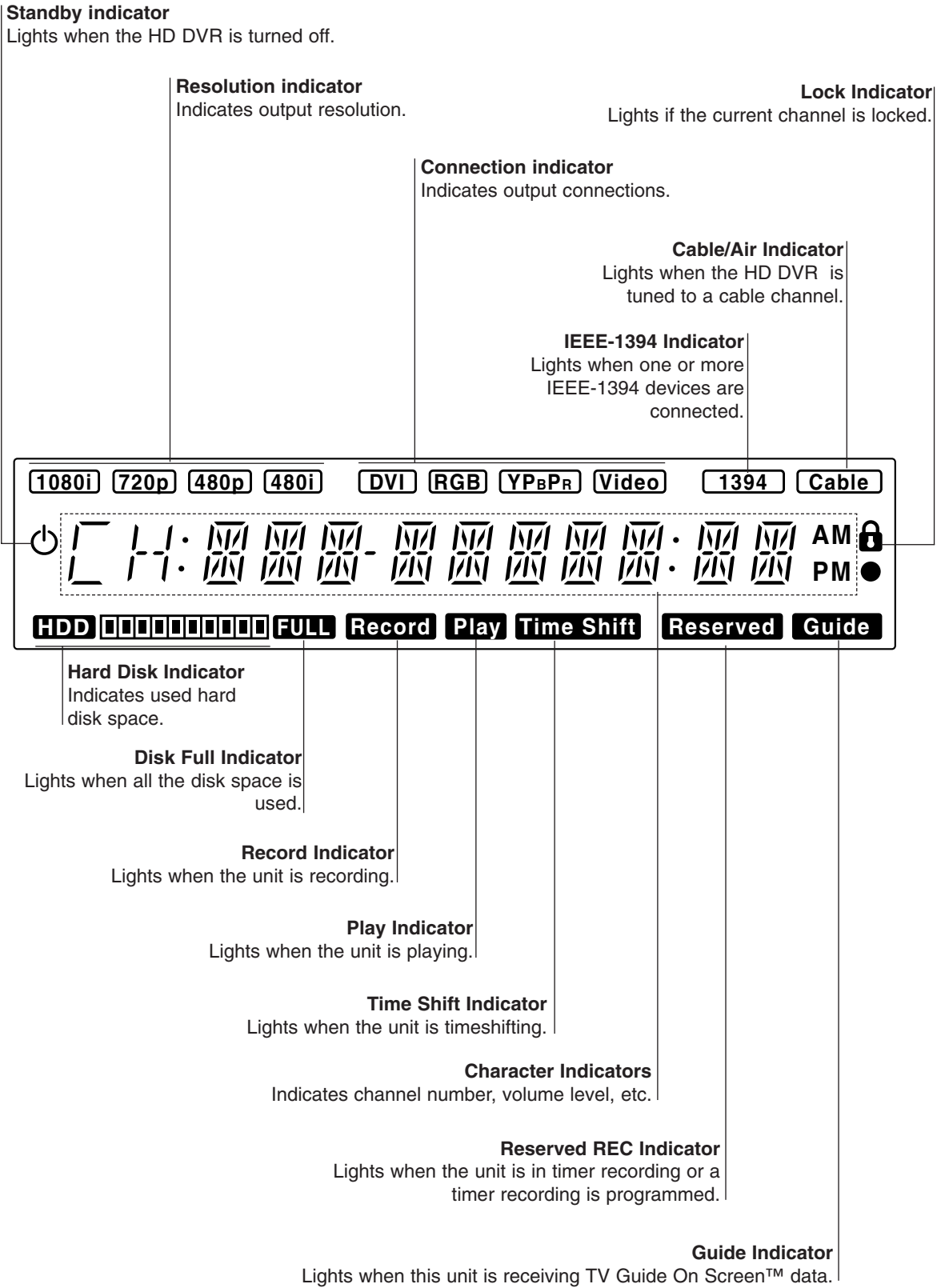
SELECT

If the main menu is displayed, pressing the SELECT button will activate the selected MENU option. If the SELECT button is pressed while you are in normal viewing, the channel banner will be displayed.

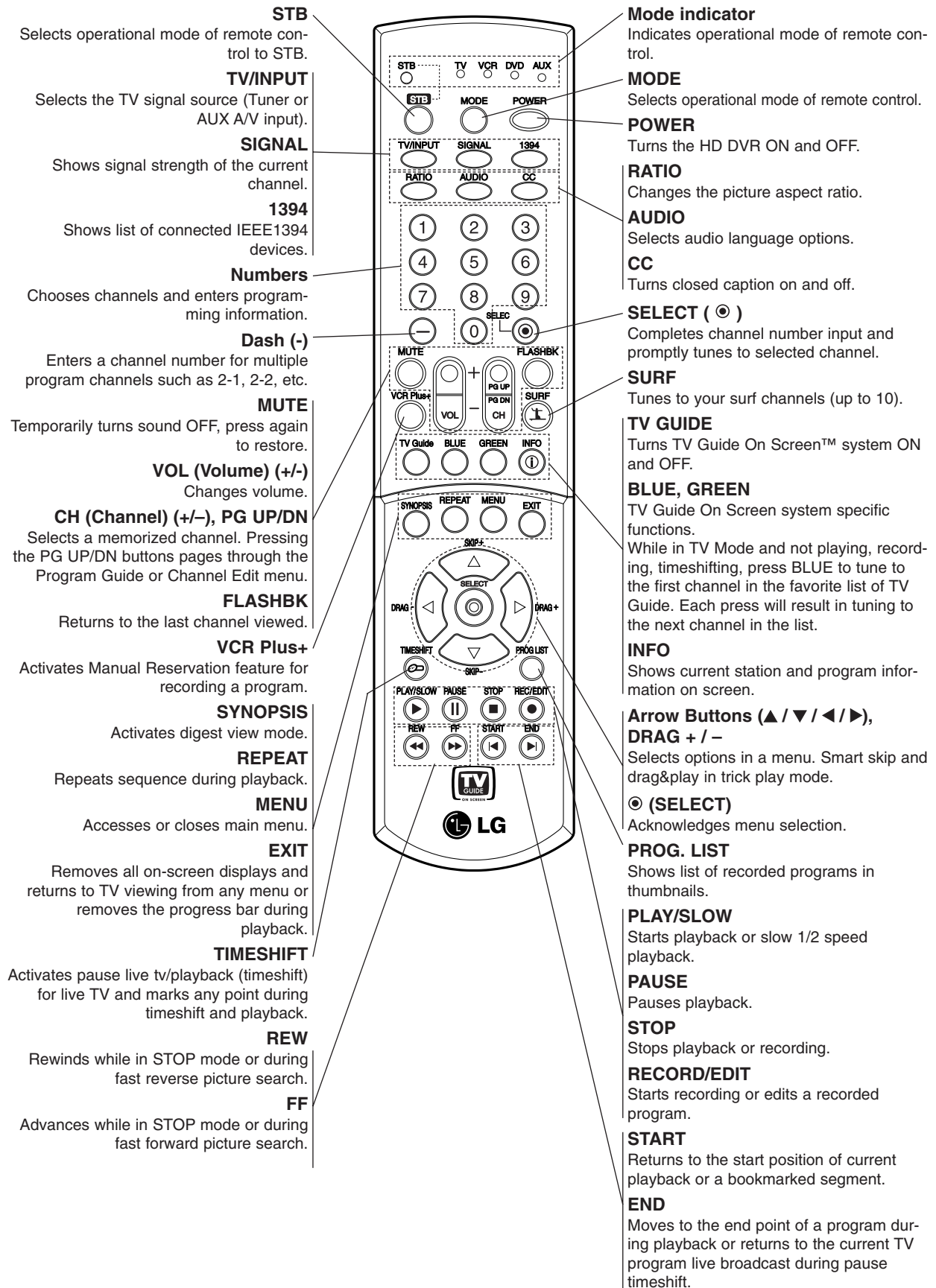
EXIT

Clears all on-screen displays and returns to normal viewing from any menu.

Display Window



Remote Control Key Functions



Connection Panel

ANT IN

Connect to over-the-air outdoor/indoor antenna.

G-LINK

Gemstar cable box control connector. Connect G-LINK cable (supplied with your set-top box) to make timed recordings using the TV Guide On Screen™ feature.

Note: If there is a “demo pin” in the jack, remove it to disable demo mode.

AUDIO/VIDEO INPUT 1, 2

Connect audio/video output of an external source (Audio system, TV/Monitor, VCR, Camcorder).

VIDEO OUT 1, 2

Connect to TV with composite video inputs.

COMPONENT OUTPUT

Connect to TV with YPbPr input.

DIGITAL AUDIO OUT (OPTICAL)

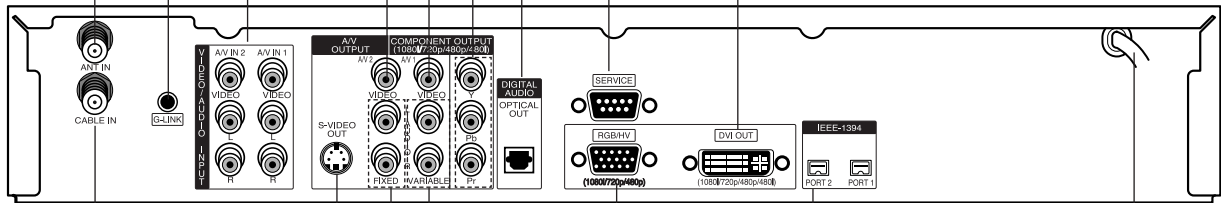
Connect to digital (optical) audio equipment.

AUTHORIZED SERVICE ONLY

Is used only for authorized service purposes.

DVI OUT

Connect to TV with DVI connection.



AC Power Cord

Plug into the power source.

IEEE-1394

Connect to IEEE-1394 equipment.

RGB OUT

Connect to TV with RGB input.

Variable “volume” AUDIO OUT (Left/Right)

Connect to a TV, amplifier, receiver or stereo system. You can adjust the volume of this audio out on HD DVR.

Fixed “volume” AUDIO OUT (Left/Right)

Connect to a TV, amplifier, receiver or stereo system. You cannot adjust the volume of this audio out on HD DVR.

S-VIDEO OUT

Connect to TV with S-Video input.

CABLE IN

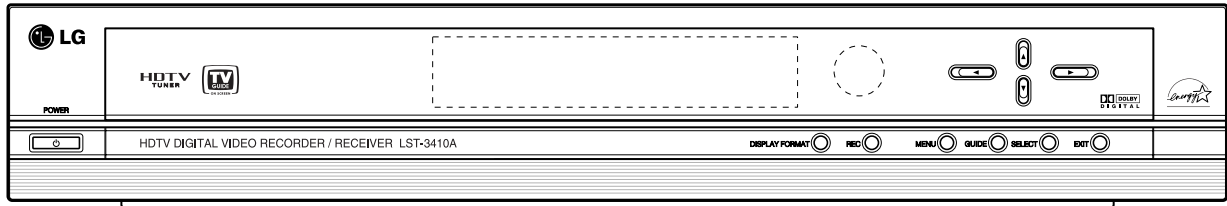
Connect to cable TV (CATV) signal source.



Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

Unpacking HD DVR and Accessories/Connection Overview

Make sure you have received all the accessories listed below with the HD DVR.

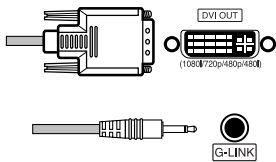
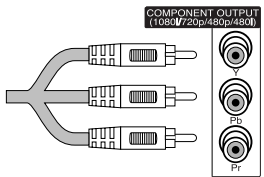
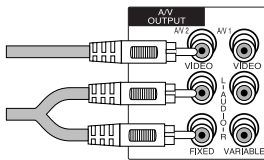


HDTV DIGITAL VIDEO RECORDER / RECEIVER (HD DVR)

This HD DVR is capable of receiving signals from cable and/or over-the-air antenna sources.

Included with the HD DVR are the following accessories.

Audio Cable/Video Cable/Component (YPbPr) Cable/G-LINK cable
Remote Control and 2 AA Batteries



Audio/Video Jacks and Cables

The Audio/Video jacks provide excellent picture and sound quality. They are used for making most Audio/Video connections between components. The Audio/Video jacks may be color coded (yellow for video, red for right audio, and white for left audio). If your component has only one input for audio (mono), connect it to the left (white L/mono) audio jack on the HD DVR.

Component Video Out Jacks and Cables

Component Video Cables are used to connect the HD DVR to an industry standard YPbPr compatible HD Monitor (green for Y, blue for Pb, and red for Pr). Remember to also connect the left and right audio cables. The YPbPr Component jacks carry only the picture signals, not the sound.

DVI-HDTV port and Cable

DVI cable is used to connect the HD DVR to an industry standard DVI-HDTV compatible HD monitor. A DVI jack carries only the video signals, not the audio.

G-LINK cable

G-LINK Cable is used to control cable box with the TV Guide On Screen™ system.

TV Guide On Screen system Demo Pin and Tag

Demo Pin consists of a tag and rivet that restricts the TV Guide On Screen system. Retail Demo feature contained in the HD DVR firmware.

You must remove the Demo Pin from the G-LINK jack and insert the IR Controller in the G-LINK port. This disables the retail Demo feature and allows normal Host device operation.

Remote Control

In addition to the HD DVR, the remote control can be programmed to operate other IR controlled accessory devices.

Remote Control Operating Range

Point the remote control at the remote sensor and press the buttons.

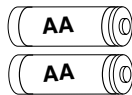
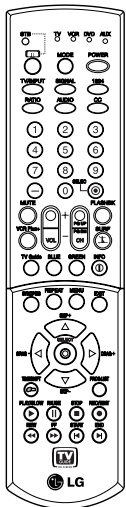
- **Distance:** About 23 ft (7 m) from the front of the remote sensor.
- **Angle:** About 30° in each direction of the front of the remote sensor.

Remote Control Battery Installation

Detach the battery cover on the rear of the remote control, and insert two batteries (size AA) with + and - aligned correctly.



Caution
Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.).



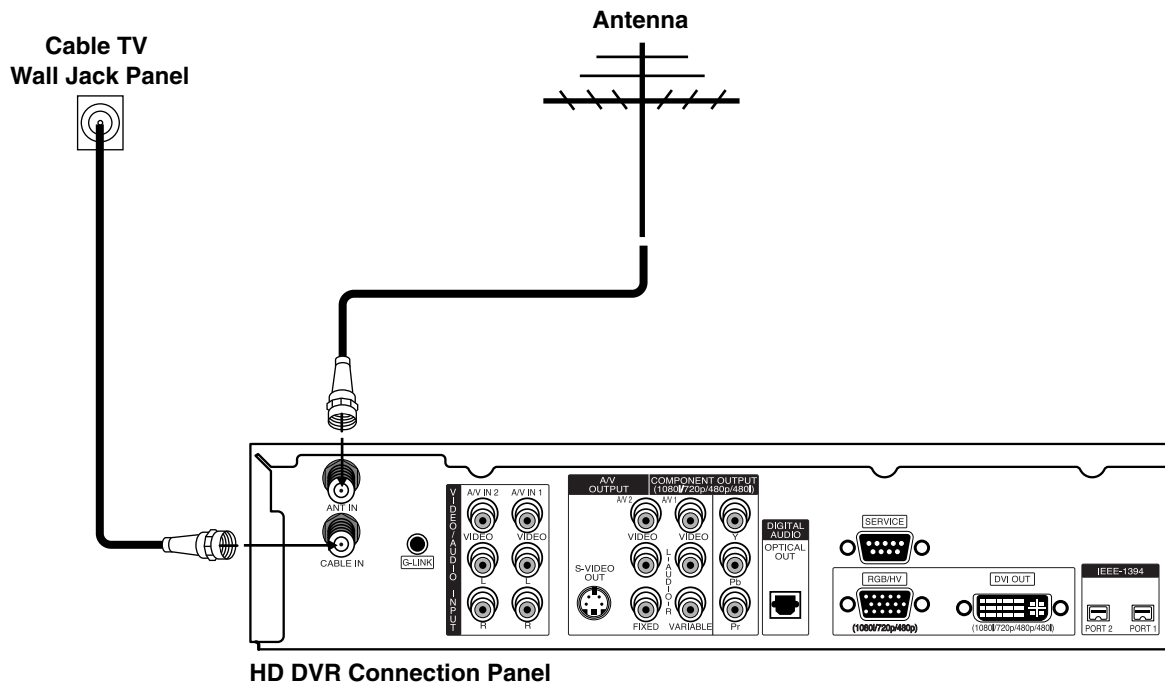
Connections

Antenna/CATV Connections

Before connecting an antenna and/or cable service

The LST-3410A is a high performance, high gain system intended for operation under normal or weak signal conditions, providing the best reception with its optimum gain capability. You can find HDTV channels/content information for your local broadcast area by going to Zenith website "WWW.ZENITH.COM" and clicking on "HDTV Program Schedule" under HDTV.

- 1 Connect your Antenna to the "ANT IN" jack on the HD DVR with a coaxial RF cable.
- 2 Connect your cable TV (CATV) service to the "CABLE IN" jack on the HD DVR with a coaxial RF cable.

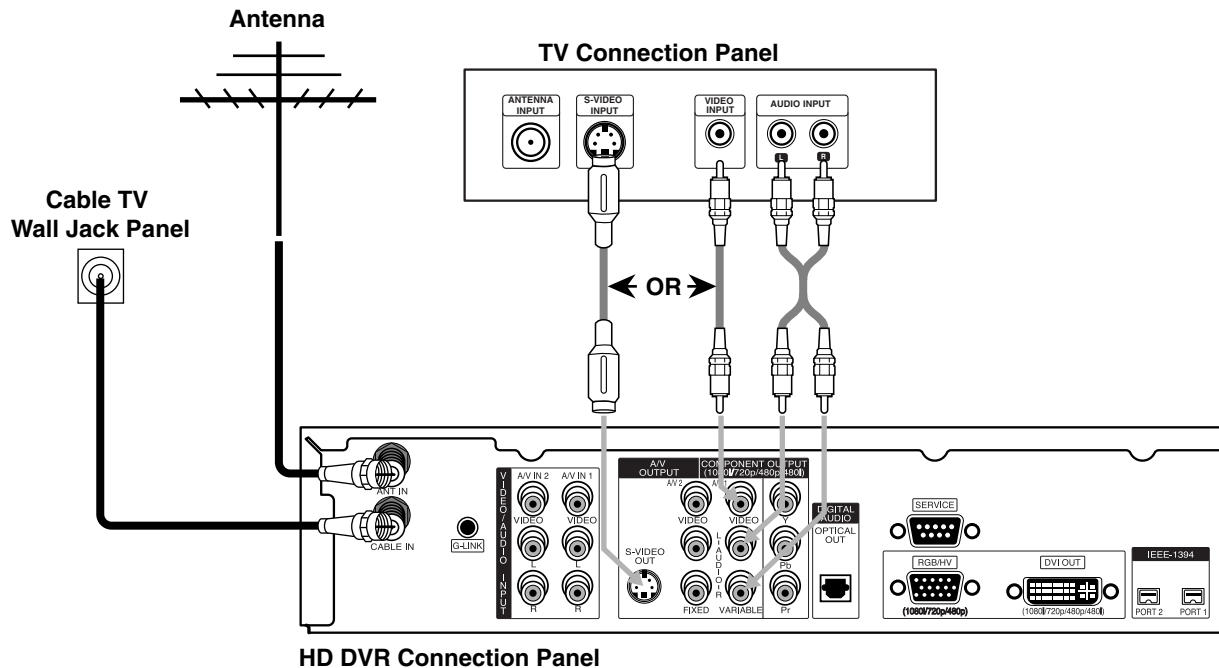


Connections (Continued)

Display Formats Overview

- The HD DVR offers various display formats and multiple video outputs. When the HD DVR is connected to A/V systems, the HD DVR can provide video signal formats 1080i, 720p, 480p, or 480i.
- The HD DVR has digital audio outputs; Dolby Digital 5.1 and PCM. The HD DVR sends out digital audio signal to OPTICAL audio outputs when the HD DVR is receiving digital broadcasts.

Analog Monitor Connections



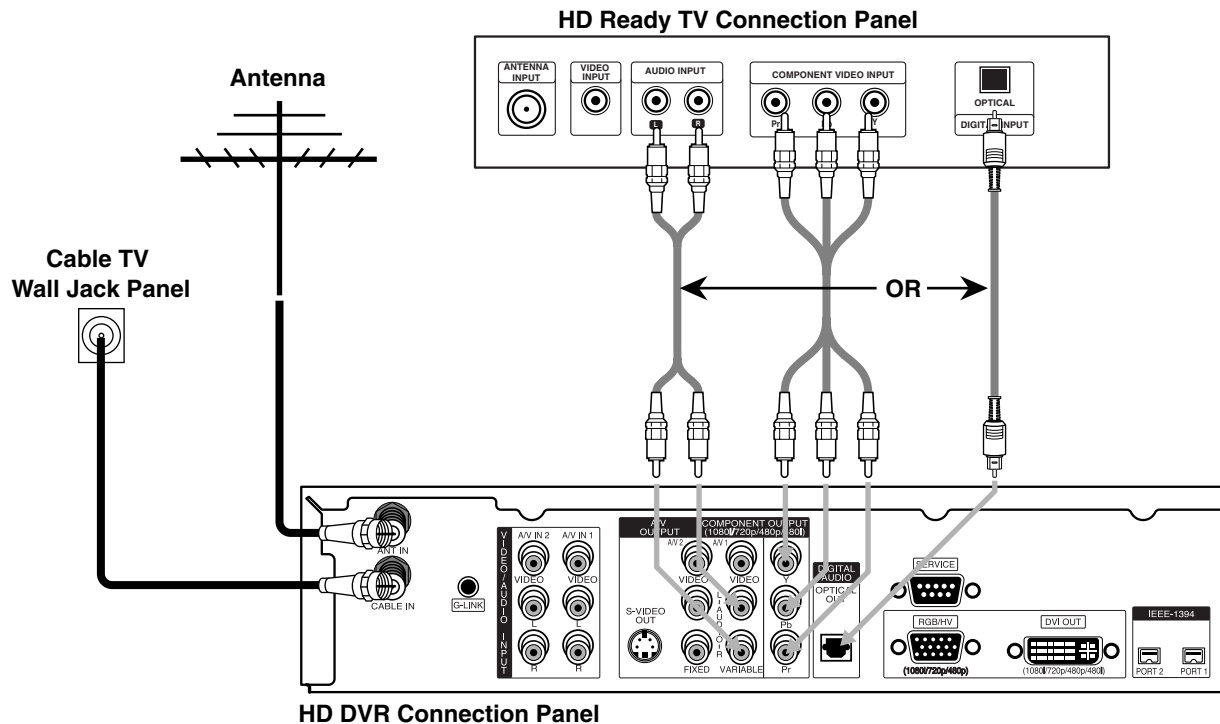
- 1** Connect your Antenna to the “ANT IN” jack on the HD DVR using a coaxial RF cable.
- 2** Connect your cable TV (CATV) service to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.
- 3** Connect the “AUDIO OUT” and “VIDEO OUT” jacks from the HD DVR to the “A/V IN” jacks on your TV with RCA-type cables. If your TV is equipped with an S-Video jack, use the S-VIDEO OUT connection instead.

Note

These connections are only available if the display format is 480i.

Connections (Continued)

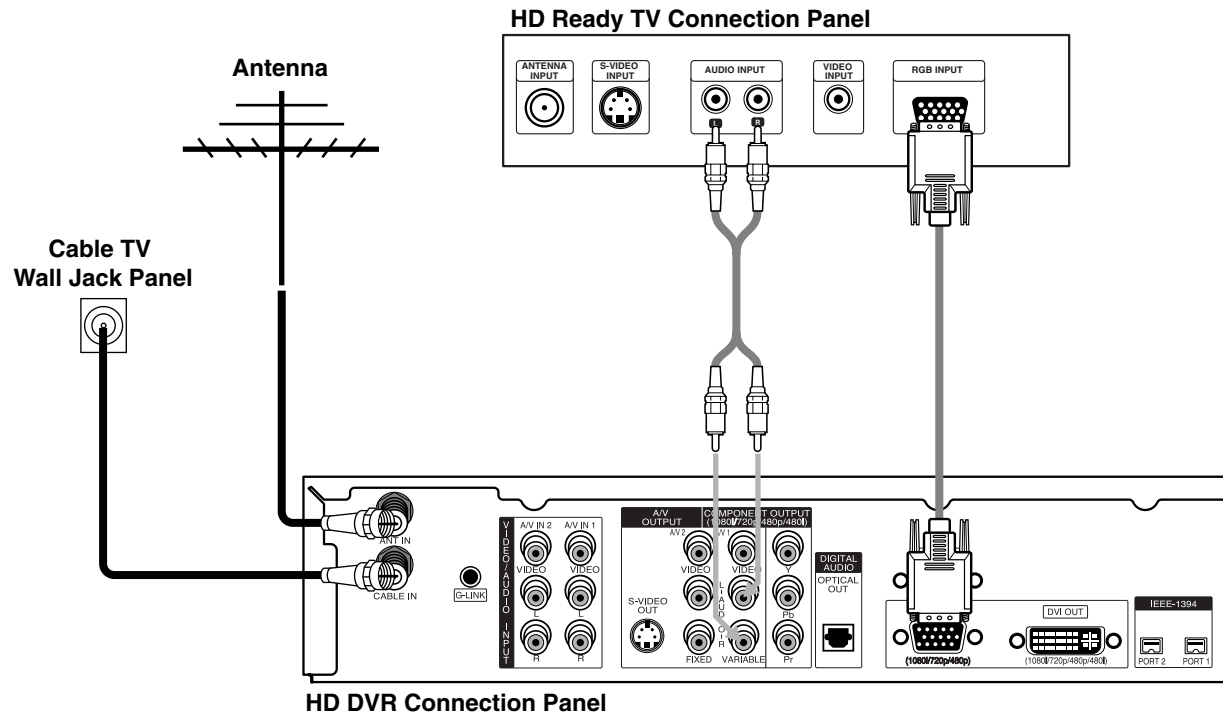
HD Monitor Component (YPbPr) Connections



- 1** Connect your Antenna to the “ANT IN” jack on the HD DVR with a coaxial RF cable.
- 2** Connect your cable TV (CATV) service to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.
- 3** Connect the “COMPONENT OUT” jacks from the HD DVR to the “COMPONENT IN” jacks on your TV with RCA-type cables. (The Output Selection must be set to YPbPr, refer to Setting the Display Format, see page 23).
- 4** Connect the L/R “AUDIO OUT” jacks from the HD DVR to the L/R “AUDIO IN” jacks on your TV with RCA-type cables. If your TV is equipped with a “Digital Audio Input (Optical)” jack, connect to “DIGITAL AUDIO (OPTICAL OUT)” jack.

Connections (Continued)

HD Monitor RGB Connections



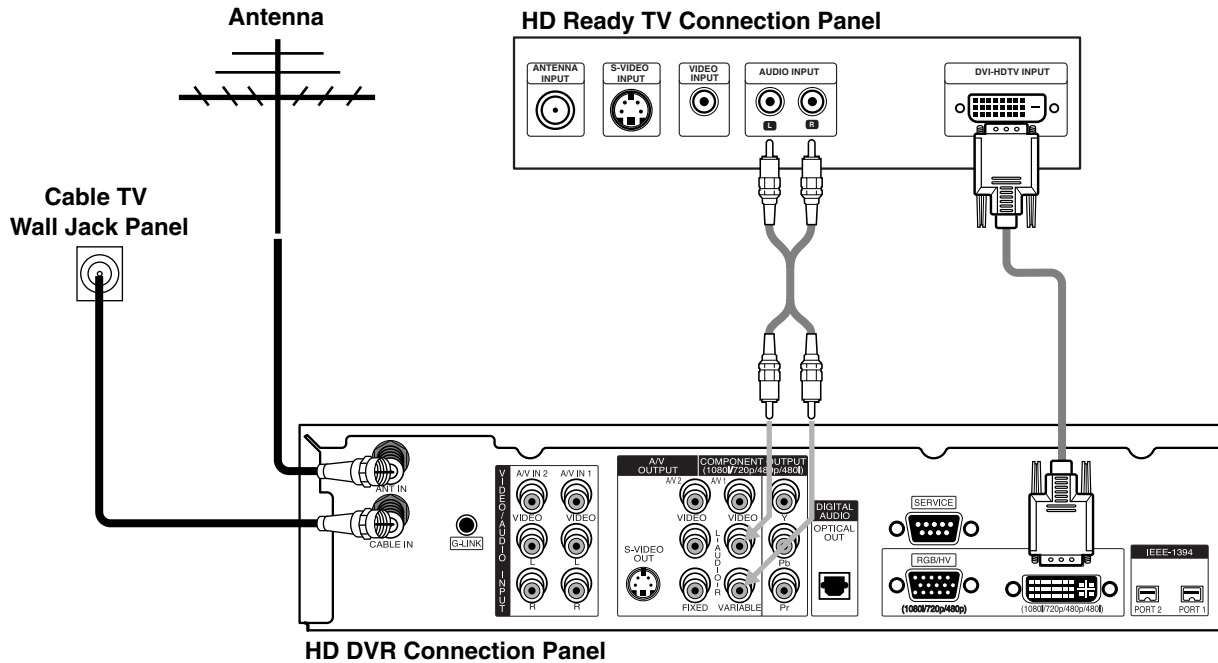
- 1** Connect your Antenna to the “ANT IN” jack on the HD DVR with a coaxial RF cable.
- 2** Connect your cable TV (CATV) service to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.
- 3** Using a VGA-type cable, connect the “RGB OUT” jack from the HD DVR to the “RGB IN” jack on your TV.
- 4** Connect the L/R “AUDIO OUT” jacks from the HD DVR to the L/R “AUDIO IN” jacks on your TV with standard RCA-type cables.

Note

The RGB output is useable only if 1080i, 720p, or 480p display format is selected.

Connections (Continued)

HD Monitor DVI Connections



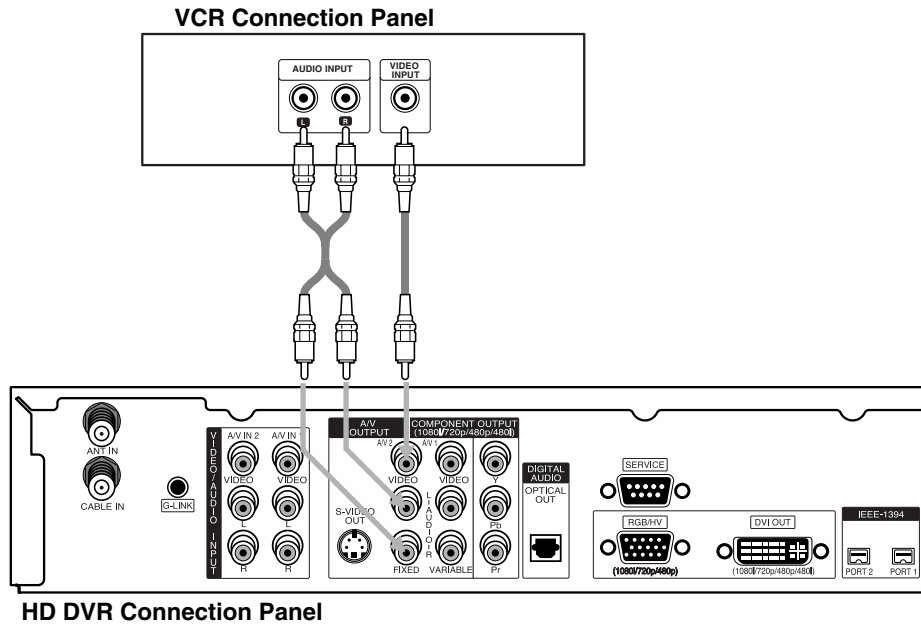
- 1** Connect your Antenna to the “ANT IN” jack on the HD DVR with a coaxial RF cable.
- 2** Connect your cable TV (CATV) service to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.
- 3** Connect the “DVI OUT” jack from the HD DVR to the “DVI IN” jack on your TV with a DVI-type connector. (The Output Selection must be set to DVI, refer to Setting the Display Format on page 23.)
- 4** Connect the L/R “AUDIO OUT” jacks from the HD DVR to the L/R “AUDIO IN” jacks on your TV with standard RCA-type cables.

Notes

- A DVI-HDTV input is one that is compliant with EIA-861 and HDCP specifications. Check your TV or monitor’s user manual to find out if the TV or monitor’s DVI input is compliant with these specifications.
- Some HD Monitors designed for PC applications using DVI-D may not work with this connection.

Connections (Continued)

VCR Connections



Connect the L/R “AUDIO OUT” jacks and “VIDEO OUT” jack from the HD DVR to the “A/V in” jacks on your VCR with standard RCA-type cables. (If your VCR is equipped with an S-Video jack, you can use the “S-VIDEO” connection with an “S-Video” cable instead.)

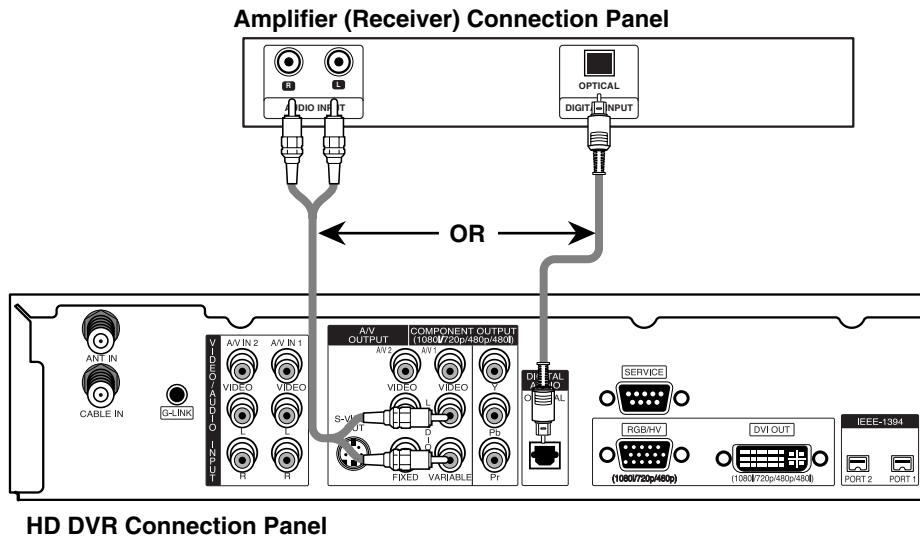
Caution

If the 480i display format is selected, the VCR will record an onscreen display onto the tape during recording if:

- the channel is changed with CH (+/-)
- the sound level is adjusted with VOL (+/-)
- or by pressing the SELECT button, etc.

Connections (Continued)

Amplifier (Receiver) Connections



Connection for an amplifier equipped with two channel analog stereo or Dolby Surround

Connect the left and right AUDIO OUT jacks from the HD DVR to the audio left and right in jacks on your amplifier, receiver, or stereo system, with the audio cables supplied.

Connection for an amplifier equipped with two channel digital stereo (PCM) or to an Audio/ Video receiver equipped with a multi-channel decoder (Dolby Digital™)

Connect one of the HD DVR's DIGITAL AUDIO OUT jacks (OPTICAL) to the corresponding input jack on your amplifier. Use an optional digital (optical) audio cable.

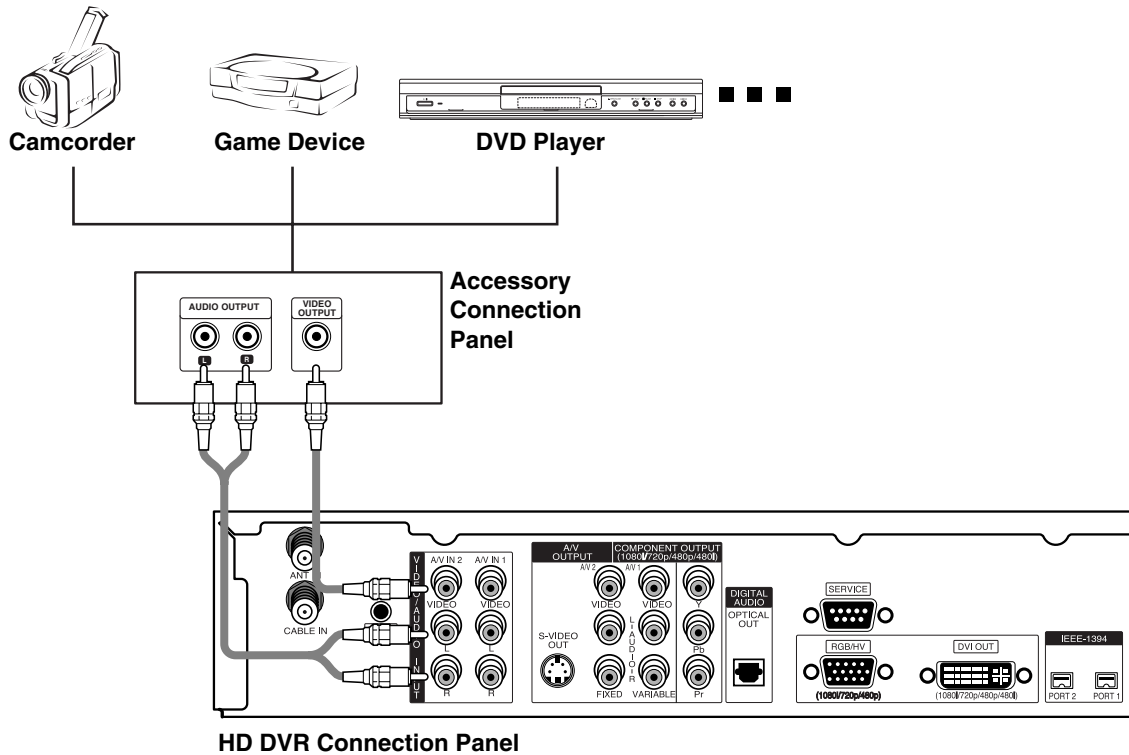
Digital Multi-channel sound

A digital multi-channel connection provides the best sound quality. For this you need a multi-channel Audio/Video receiver that supports one or more of the audio formats supported by your HD DVR (Dolby Digital). Check the receiver manual and the logos on the front of the receiver.

Connections (Continued)

Accessory Audio/Video (A/V) Connections to the HD DVR

Connect the A/V IN 1 or A/V IN 2 jacks from the HD DVR to the audio/video out jacks on your accessory component, using optional audio/video cables.



Connections (Continued)

Cable Box Connections using “A/V IN 1” jack on the HD DVR

Use your HD DVR to control your cable box with the TV Guide On Screen™ system.

Locate the jack marked G-LINK. This jack is for the G-LINK cable. Insert the connector into the G-LINK jack.

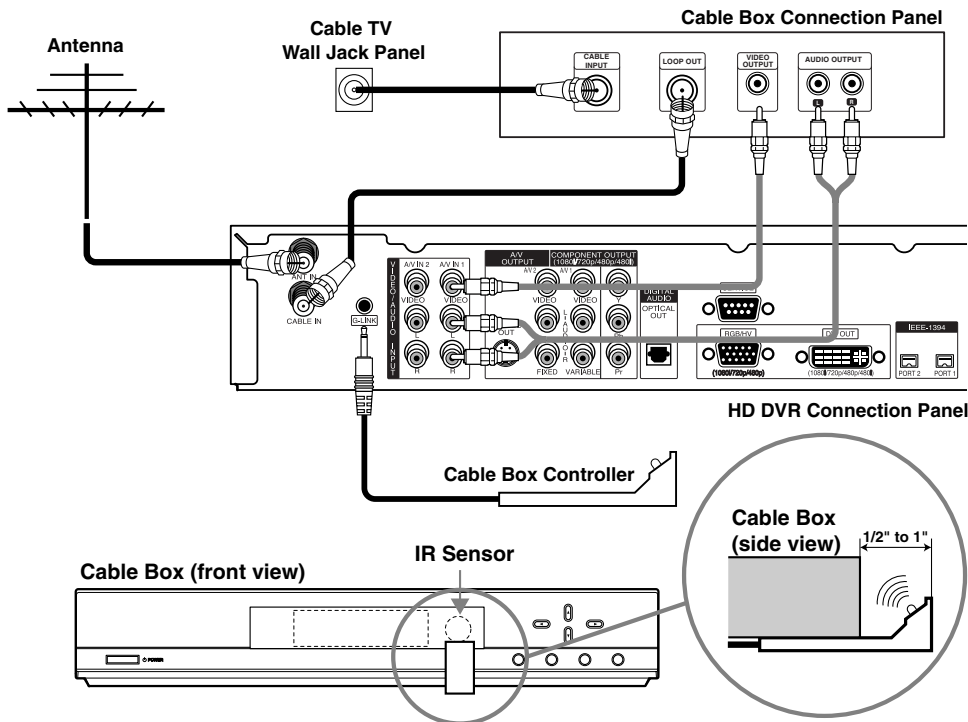
Note: If there is a “demo pin” in the jack, remove it to disable demo mode.

Place the other end of the G-LINK cable with the G-LINK wand in front of your Cable Box in such a way as to allow for an unrestricted path for the IR (infrared) signal to be able to reach the front panel of the Cable Box.

Note

See page 54 for TV Guide On Screen system information and set up.

- 1 Connect your cable TV (CATV) service to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.



- 2 Connect the “AUDIO OUT” and “VIDEO OUT” jacks from your Cable Box to the “A/V IN 1” jack on the HD DVR with standard RCA-type cables.

Note

The HD DVR cannot receive program information if you connect the “VIDEO OUT” jack from your Cable Box to the “A/V IN 2” jack on the HD DVR.

- 3 You can watch terrestrial digital broadcasting if you connect your Antenna to the “ANT IN” jack on the HD DVR with a coaxial RF cable.

- 4 You can watch unscrambled digital cable broadcasting if you connect “LOOP OUT” from the cable box to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.

Notes

- Select “Cable Box” menu option to watch cable broadcasting.
- Select “Digital” menu option to watch unscrambled digital terrestrial/cable broadcasting.

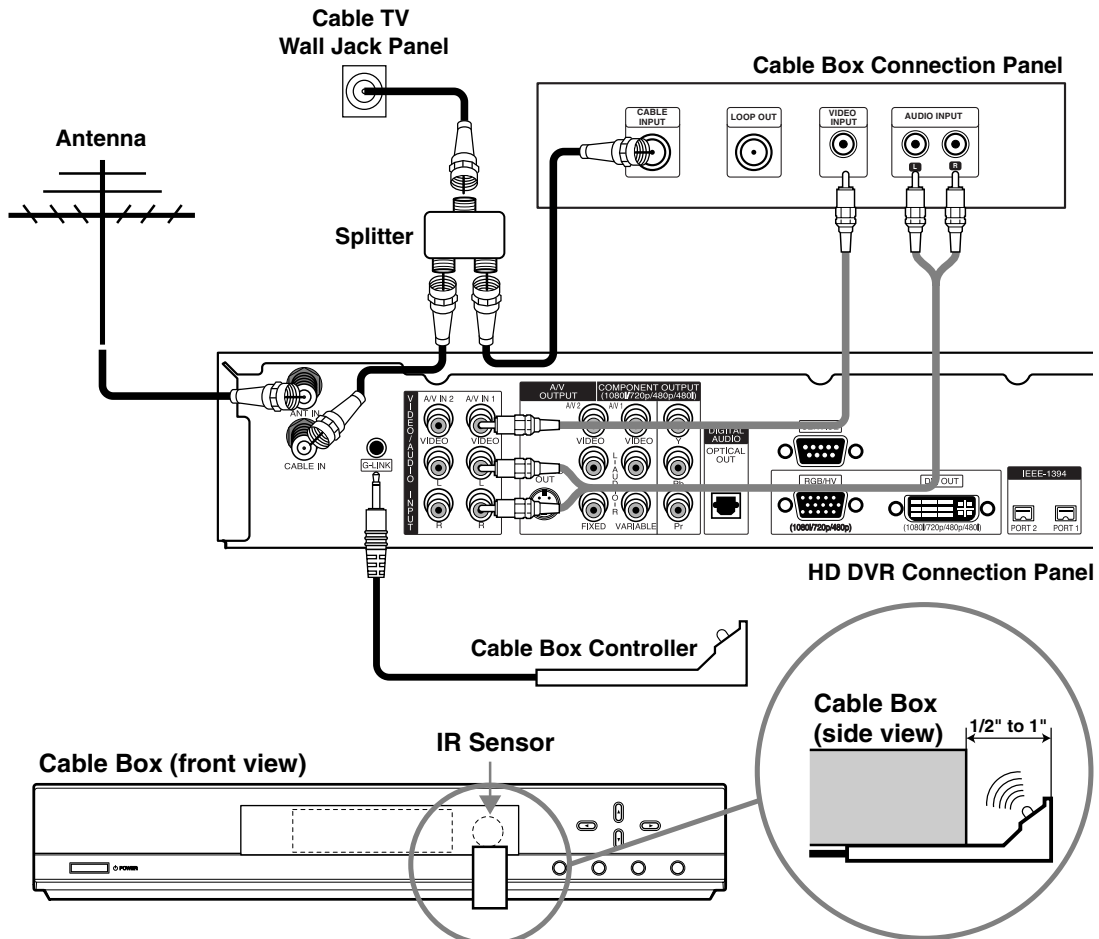
Connections (Continued)

Cable Box Connections using “A/V IN 1” jack and splitter

You can use a splitter if your cable box does not have a “LOOP OUT” jack.

Note

A splitter is not included in the package and must be purchased separately.



- 1 Connect your cable TV (CATV) service to the splitter and connect the splitter to the “CABLE IN” jack on your Cable Box and to the “CABLE IN” jack on the HD DVR with coaxial RF cables.
- 2 Connect the “AUDIO OUT” and “VIDEO OUT” jacks from your Cable Box to the “A/V IN 1” jack on the HD DVR with standard RCA-type cables.

Note

The HD DVR cannot receive program information if you connect the “VIDEO OUT” jack from your Cable Box to the “A/V IN 2” jack on the HD DVR.

- 3 You can watch terrestrial digital broadcasting if you connect your Antenna to the “ANT IN” jack on the HD DVR with a coaxial RF cable.

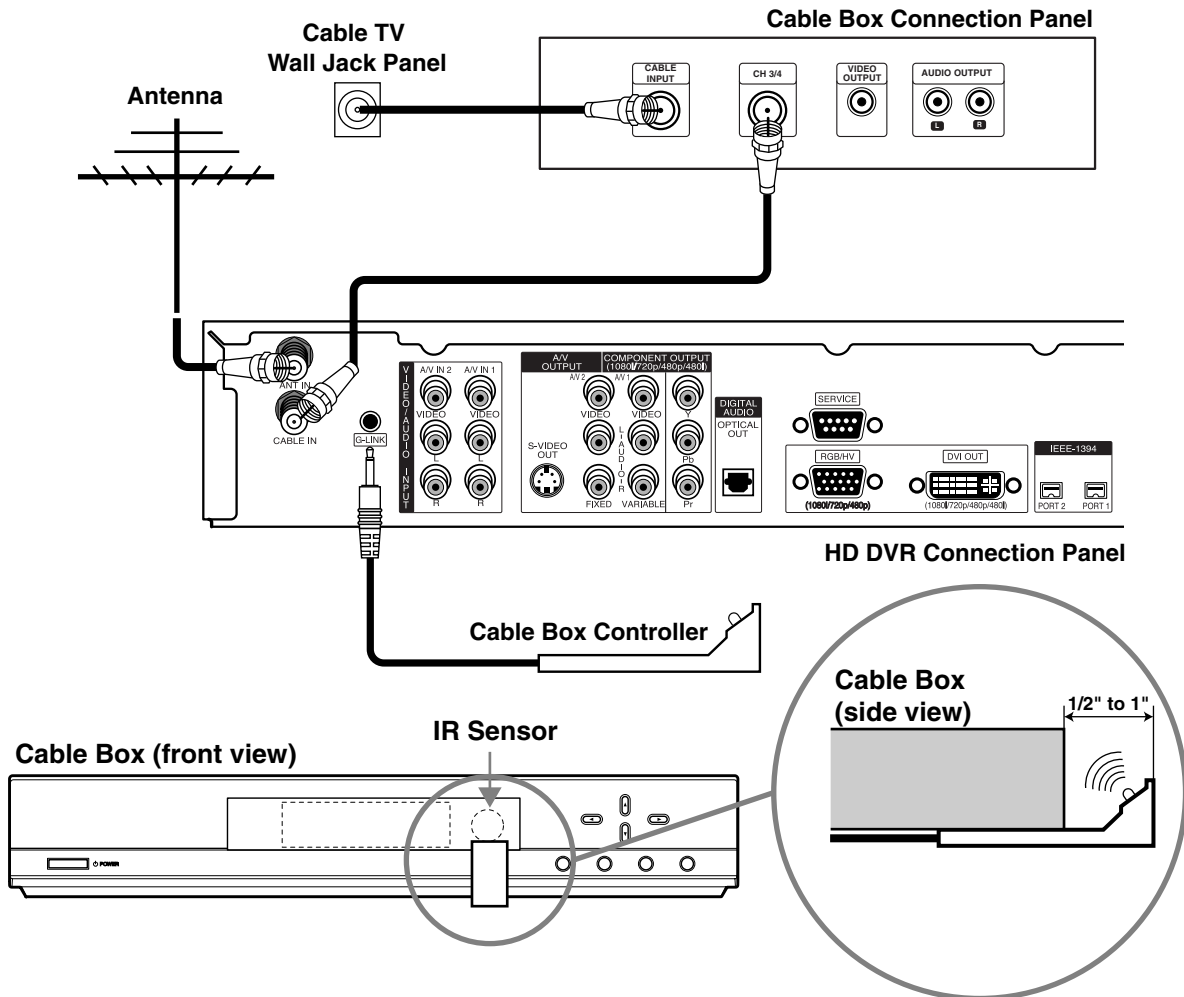
Notes

- Select “Cable Box” menu option to watch cable broadcasting via cable box.
- Select “Digital” menu option to watch unscrambled digital terrestrial/cable broadcasting.

Connections (Continued)

Cable Box Connections using “CABLE IN” jack on the HD DVR

Note: Cable Box connections using “A/V IN 1” jacks is recommended but you can use “CABLE IN” RF jack instead if your cable box does not have “AUDIO OUT” and “VIDEO OUT” jacks.



- 1 Connect your cable TV (CATV) service to the “CABLE IN” jack on your Cable Box with a coaxial RF cable.
- 2 Connect the “CH 3/4” jack (see drawing) from your Cable Box to the “CABLE IN” jack on the HD DVR with a coaxial RF cable.
- 3 You can also watch terrestrial digital broadcasting if you connect your Antenna to the “ANT IN” jack on the HD DVR with a coaxial RF cable.

Notes

- Select “Cable Box” menu option to watch cable broadcasting via cable box.
- Select “Digital” menu option to watch digital terrestrial broadcasting.

Connections (Continued)

IEEE-1394 Connections

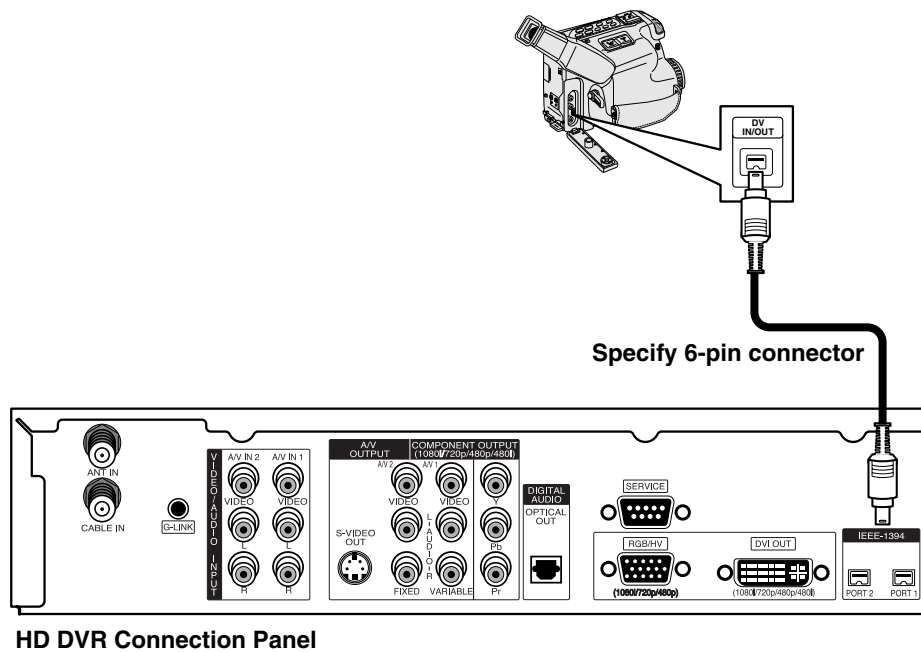
Connect the “IEEE-1394” jack from the compatible device to one of the “IEEE-1394” jacks on the HD DVR with an IEEE-1394 cable.

Compatible IEEE-1394 devices

DVHS Maker	Compatible Model
Victor	HM-DH30000
Panasonic	NV-DH1, NV-DH2
Hitachi	DT-DR20000, DT-DRX100
Toshiba	A-HD2000
JVC	HM-DH30000U
Mitsubishi	HV-HD1000

MV Camcorder Maker	Compatible Model
Sony	IP-7, IP-55, IP-220

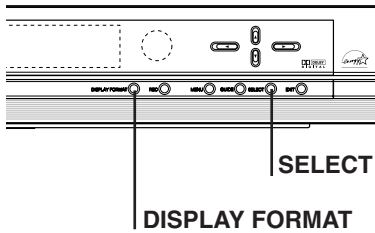
DVHS or MV Camcorder Connection Panel



Notes

- The HD DVR does not allow daisy-chaining of IEEE-1394 device.
- Do not connect more than one IEEE-1394 devices of a kind. You can connect only one DVHS and one MV Camcorder.

Setting the Display Format Output



Notes

- Some monitors may not work with some output resolutions.
- 1080i, 720p, 480p, and 480i messages are displayed in the display window instantly as they are selected.
- As you operate the menu to first highlight the desired output resolution and press SELECT, the next menu in series appears and the onscreen display changes accordingly.
- Any dynamic display format changes only work after the onscreen display disappears.

The HD DVR supports a variety of display formats. The DISPLAY FORMAT button on the front panel changes the output connector and resolution. The output resolution may be different from the original broadcast format.

Display Format Output Setup

- 1 Press DISPLAY FORMAT on the front panel once.**
The current output connector's indicator flashes in the display window.
- 2 Depending on the type of monitor that the HD DVR is connected to, press DISPLAY FORMAT repeatedly on the front panel to select desired output connector. (YPbPr, RGB, DVI, or Video). (Skip this step if you don't want to change output connection.)**
- 3 Press SELECT on the front panel to confirm your output connector selection.**
The current output connector's indicator flashes in the display window.
- 4 Depending on the type of monitor that the HD DVR is connected to, press DISPLAY FORMAT repeatedly on the front panel to select desired output resolution. (1080i, 720p, 480p, 480i, native, variable 1, variable 2, or variable 3). (Skip this step if you don't want to change output resolution.)**
1080i, 720p, 480p, and 480i indicators are shown in the display window and disappear after a short while or if another format key is pressed.
- 5 Press SELECT on the front panel to confirm your output resolution selection.**
Display Format setup is complete.

Display Format Modes	Input Signal Formats	Output Signal Formats
1080i	all formats	1080i
720p	all formats	720p
480p	all formats	480p
480i (factory default)	all formats	480i
native	1080i	1080i
	720p	720p
	480p	480p
	480i	480i (YPbPr), 480p (RGB, DVI)
variable 1	1080i	1080i
	720p	720p
	480p/480i	480p
variable 2	1080i/720p	1080i
	480p/480i	480p
variable 3	1080i/720p	720p
	480p/480i	480p
EZ DVI*	all formats	changes according to monitor type

* In EZ DVI mode, the output display format is automatically adapted based on the preferred resolution format of the DVI-HDTV monitor. The format may be converted from the original broadcast format.

* The EZ DVI mode is only available if a DVI-HDTV compatible monitor is connected to the HD DVR.

OUTPUT CONNECTION	AVAILABLE FORMATS
COMPONENT VIDEO OUT	1080i/720p/480p/480i/native/variable 1/variable 2/variable 3
RGB OUT	1080i/720p/480p/native/variable 1/variable 2/variable 3
DVI-HDTV OUT	1080i/720p/480p/native/variable 1/variable 2/variable 3
VIDEO OUT (factory default)	All formats converted to 480i
S-VIDEO OUT	All formats converted to 480i

Basics Features Overview



2 Mega Pixels HDTV Reception

With the LST-3410A, you can view a two-mega pixel picture with an aspect ratio of 16:9; giving you six times the resolution of regular TVs. Your viewing experience is just like you are right there.

Record HD programs and watch them over and over again without any picture quality loss.



Record now and watch later

Watch the evening news whenever you want. You don't have to be present when a program starts. Just schedule TV Guide On Screen™ EPG to record the program and watch it whenever you want.



Pause live TV

Do not miss a scene from a live broadcast. If the telephone rings while you are watching your favorite live broadcast, just press "TIMESHIFT" and "PAUSE" before answering the phone. The timeshift function will be activated and the broadcast is then recorded for later viewing.

After the phone call or viewing interruption, press "PLAY", "REW", or "FF" to watch the program.

Press "STOP" to return to the live broadcast. The timeshifted program content will appear on the Program List.



Seek a scene using the DRAG +/- feature

You can search for a scene using the DRAG +/- feature during playback.

You can move to any point on the progress bar. Release the button and start watching from that point.

Basics Features Overview (Continued)



Smart Skip

During playback, use SKIP (+/-) to skip to the next/previous scene. Smart Skip analyzes the video scenes and cues playback to the next scene.



Save your recordings to DVHS (Digital VHS)

You can archive the contents in your LST-3410A HD DVR to a DVHS recorder.

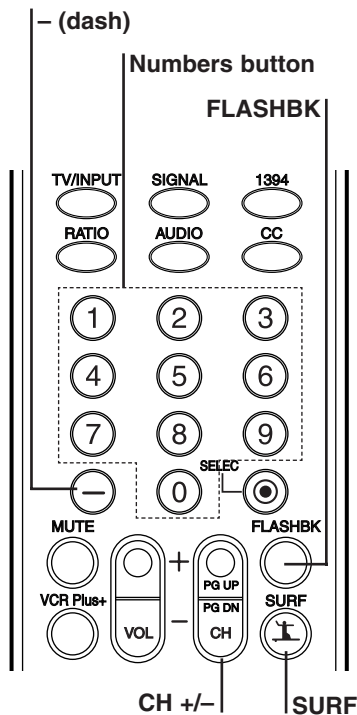
Connect the HD DVR to a DVHS recorder using the "IEEE-1394" jack. Select "DVHS OUT" on the Program List to save recorded contents to the connected DVHS recorder.



Recording capability with the IEEE-1394 connection

You can also record contents stored on a DVHS recorder or MV Camcorder. Connect the HD DVR to the DVHS or MV Camcorder using the "IEEE-1394" jacks. Press "1394" on your remote control. Set up the LST-3410A with the control panel to record on the HDD (Hard drive), start DVHS or MV Camcorder playback.

Basics Features Overview (Continued)



Channel Selection

Follow instructions below to select channels.

Number and – (dash) buttons (on the remote control)

Use **Number (0-9)** and **– (dash)** buttons to select a channel directly.

FLASHBK button (on the remote control)

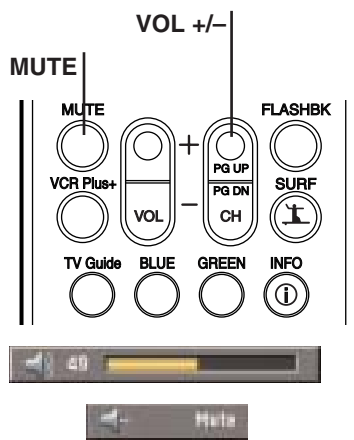
Press to return to the previous channel you viewed. For example, if the HD DVR is tuned to channel 55 and then you change to channel 26, pressing FLASHBK will return to channel 55.

SURF button (on the remote control)

Press to scroll through your Surf channels.

CH +/- buttons (on the remote control) or ▲ / ▼ (on the front panel)

Use CH +/- on the remote control or ▲ / ▼ on the front panel to cycle the HD DVR through the channels in memory.



Volume Adjustment

Adjusts the sound for variable analog audio out from the HD DVR.

VOL +/- buttons (on the remote control) or ◀ / ▶ (on the front panel)

Use **VOL +/-** on the remote control or **◀ / ▶** on the front panel to adjust the volume for analog audio out on the HD DVR.

MUTE (on the remote control)

Press **MUTE** to turn off the sound for analog audio out on the HD DVR.

Notes

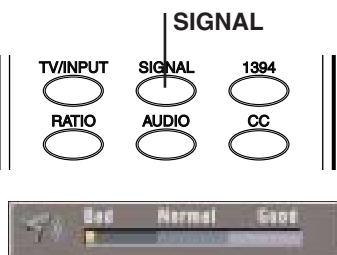
- Before setting Audio Variable to Off, make sure that you have turned down the TV's volume to the minimum. Otherwise, sudden high volume sound may cause hearing or speaker damage.
- The volume of Digital Audio out on HD DVR can not be adjusted on the HD DVR front panel.

Signal

Press SIGNAL on the remote control to display the signal strength bar. Shows the signal strength bar for the incoming signal. This can be used to help you adjust the antenna to the correct position for your location. You can view the signal strength bar by pressing SIGNAL on the remote control.

Tip

Refer to www.antennaweb.org for finding the optimal antenna position. AntennaWeb.org, will help you determine the proper outdoor antenna to use in order to receive your local broadcast television channels.



Basic Menu Operation

There are several ways to customize the feature settings available on the menus. Most menus consist of three levels to set up the options, but some have greater depth. If you press the MENU button, only the first and second level of the menu system will appear on the TV screen. The third level can be displayed by pressing **⊙** (SELECT). If a menu has more than three levels, the pop-up dialogue box will be displayed as the fourth or fifth level. As an aid for navigating the menu levels, you will see “**⊙**” or “**▶**” on the right side of the menu label.



To bring up and exit the Menu

Press the MENU button on the remote control to bring up the menu. A second press of the MENU button or a press of the EXIT button will take you back to TV viewing.

To go to the next level

Press “**⊙**” or “**▶**” on the remote control.

To return to the previous level

Press “**◀**” on the remote control.

How to operate and navigate the menus

- 1** Press **MENU**.
The main menu appears.
- 2** Use **▲ / ▼** to select the desired menu option.
- 3** While the desired menu option is selected, press **▶** or **⊙** (SELECT) to move to the second level.
- 4** Use **▲ / ▼** to select the second menu option.
- 5** Press **▶** or **⊙** (SELECT) to move to the third level.
Some menu options require additional steps.
- 6** Press **⊙** (SELECT) to confirm your selection.
- 7** Press **MENU** to exit the Setup menu.

Setup Menu Operation



EZ Scan (Channel Search)

Automatically finds all channels (analog and digital) available through the antenna inputs, and stores all the active channels in the channel list. Inactive or weak channels may not appear on the list. In that case, add missing channels manually with the Ch. Edit menu. The channel list created here can be shown on the Ch. Edit menu.

1 Press MENU to display the on-screen menu.

2 Select the SETUP menu using ▲ / ▼ then press ● (SELECT) or ►. EZ Scan will be highlighted.

3 Press ● (SELECT) or ►. STD will be highlighted.

4 Select a cable band (STD, HRC, or IRC). Ask your cable service provider for your cable band if not known. In most cases you can scan for available channels correctly by selecting STD cable band. Try the other bands if you cannot find any channel with STD cable band.

5 Press ● (SELECT). The channel search process begins.

6 When channel scanning is complete, the lowest channel number found appears on the TV screen.

Ch. Edit (Add-delete Channels)

This feature allows you to add or delete channels from memory manually and create your own Surf list, with up to 10 favorite channels. Press SURF on the remote control when a channel is highlighted.

1 Press MENU to display the on-screen menu.

2 Select the SETUP menu using ▲ / ▼ then press ● (SELECT) or ►. Ch. Edit will be highlighted.

3 Select the Ch. Edit using ▲ / ▼ then press ● (SELECT) or ►. Channel Edit menu appears.

To create a custom list

1. Select a channel to add or delete using ▲ / ▼ / ◀ / ▶ on the channel editing menu.
2. Press ● (SELECT) to add or delete the channel from memory.

To create a Surf list

1. Select a channel using ▲ / ▼ / ◀ / ▶ on the channel editing menu.
2. Press SURF to add the channel to the SURF LIST.

Note

- Only the channels in the custom list can be added to the surf list.

4 Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Setup Menu Operation (Continued)



DTV Signal

Shows the strength bar for incoming signal to help you adjust the antenna to the correct position for your location.

- 1** Press MENU to display the on-screen menu.
- 2** Select the SETUP menu using ▲ / ▼ then press Ⓞ (SELECT) or ►.
- 3** Select the DTV Signal using ▲ / ▼.
The signal strength bar will be displayed.
- 4** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.



You can also view the signal strength bar by pressing **SIGNAL** on the remote control.

Channel Labels

You can also add the logo of a channel to the Surf channel list by pressing the Ⓞ (SELECT) button on the remote. A dialog box will ask what you want to do with the highlighted logo area: you can replace the highlighted logo area with the current channel, or delete it.



- 1** Press MENU to display the on-screen menu.
- 2** Select the SETUP menu using ▲ / ▼ then press Ⓞ (SELECT) or ►.
EZ Scan will be highlighted.
- 3** Select the Ch. Label using ▲ / ▼ then press Ⓞ (SELECT) or ►.
Ch. Label menu appears.
- 4** Select a channel to add a logo to with CH (+/-).
- 5** Select a logo using ▲ / ▼ / ◀ / ▶.
- 6** Press Ⓞ (SELECT).
The logo is added to the channel.
- 7** Repeat steps 4 and 6 to add additional logos.
- 8** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Setup Menu Operation (Continued)



Input Source

Changes the picture and sound source so you can watch your off-air TV, cable TV, VCR, DVD etc. that you have connected to your HD DVR.

- 1** Press MENU to display the on-screen menu.
- 2** Select the SETUP menu using ▲ / ▼ then press Ⓞ (SELECT) or ►.
- 3** Select the Input Source option using ▲ / ▼ then press Ⓞ (SELECT) or ►.
The Input Source options appear.
- 4** Select a viewing Source using ▲ / ▼ / ◀ / ▶.
- 5** Press Ⓞ (SELECT) to confirm your selection.
- 6** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.



Auto Demo

Shows a demonstration of the menus on the HD DVR.

- 1** Press MENU to display the on-screen menu.
- 2** Select the SETUP menu using ▲ / ▼ then press Ⓞ (SELECT) or ►.
- 3** Select the Auto Demo option using ▲ / ▼ then press Ⓞ (SELECT) or ►.
The Auto Demo starts
- 4** Press MENU or EXIT to stop Auto Demo.

Setup Menu Operation (Continued)



Troubleshooting

Offers solutions to problems with the HD DVR.

- 1** Press **MENU** to display the on-screen menu.
- 2** Select the **SETUP** menu using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
- 3** Select **Troubleshooting** using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
The troubleshooting options appear.
- 4** Select a troubleshooting option using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
Moves to the next step in the Troubleshooting menu.
- 5** Press **MENU** to return to the previous menu or press **EXIT** on the remote control to return to TV viewing.

Options	Function (Use ▲ / ▼ to select desired option)
Unable to receive TV signal.	Automatically finds all channels available through the antenna inputs (Refer to page 28).
Invalid channel has been memorized.	You can erase channels from memory manually (Refer to page 28).
Signal is unstable in digital channel.	Shows the antenna signal strength bar. If the signal strength is weak, the picture may freeze or appear incomplete (Refer to page 29).
Current time is not set.	The Clock menu appears on the TV screen, set the clock manually (Refer to page 32).
HD DVR function does not work properly.	Shows the reason that the HD DVR function does not work properly.
There is a bad sector on the HDD.	Shows the defective ratio when a bad sector on the HDD is detected.
There is invalid info in program list.	The message for disk initialization appears. If you want to initialize, select "Yes" and then all programs will be deleted.
Cannot select IEEE1394 Device, or device is not shown on Device List.	Shows a checklist for IEEE1394 device connection.
DVHS is not working.	Shows the reason that DVHS does not work properly.
Cannot RECORD to DVHS.	Shows the reason that DVHS cannot record.
Cannot PLAY DVHS.	Shows the reason that DVHS cannot play.
Camcorder is not working.	Shows the reason that camcorder does not work properly.
Version Info.	Shows the current software version of the HD DVR.

Note

Disk initialization deletes all program lists from the HDD, see 'Invalid info' above.

Option Menu Operation



Audio Output

Set the player's Audio Output according to the type of audio system you use.

- 1** Press **MENU** to display the on-screen menu.
- 2** Use **▲ / ▼** to select the **OPTION** menu then press **▶** or **⊙** (**SELECT**) to move to the second level.
- 3** Select the desired audio output using **▲ / ▼** then press **⊙** (**SELECT**).
Dolby Digital: Select "Dolby Digital" if you connected the HD DVR's DIGITAL OUT jack to a Dolby Digital decoder (or an amplifier or other equipment with a Dolby Digital decoder).
PCM: Select when the HD DVR's DIGITAL OUT jack is connected to a 2-channel digital stereo amplifier.
- 4** Press **MENU** to return to the previous menu or press **EXIT** on the remote control to return to TV viewing.



Audio Language

The audio language choices are English, French, or Spanish in the language menu. If the selected language is not available on the program on the current channel, the first available audio language for the program is selected. If user changes the channel and if the preferred audio language, does not exist on the new channel, then the first available audio language on the program on the new channel is selected.

- 1** Press **MENU** to display the on-screen menu.
- 2** Select the **OPTION** menu using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
- 3** Select the **Audio Language** option using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
- 4** Select the desired language using **▲ / ▼** then press **⊙** (**SELECT**).
- 5** Press **MENU** to return to the previous menu or press **EXIT** on the remote control to return to TV viewing.



Clock

Use the Clock Menu to set the clock in the HD DVR to the current time.

- 1** Press **MENU** to display the on-screen menu.
- 2** Select the **OPTION** menu using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
- 3** Use **▲ / ▼** to select the **Clock** option then press **▶** or **⊙** (**SELECT**) to move to the third level.
- 4** Use **▲ / ▼** to set **Year**, then press **▶** to move to the next option.
- 5** Set the **Date and Time** using **▲, ▼, and ▶** buttons.
- 6** Press **MENU** to return to the previous menu or press **EXIT** on the remote control to return to TV viewing.

Note

You cannot change clock time after it is set by TV Guide On Screen™ system.

Option Menu Operation (Continued)



Menu for a wide (16:9) aspect ratio at 480i or 480p mode output format.



Menu for a normal (4:3) aspect ratio at 720p or 1080i mode output format.



Menu for a wide (16:9) aspect ratio at 720p or 1080i mode output format.

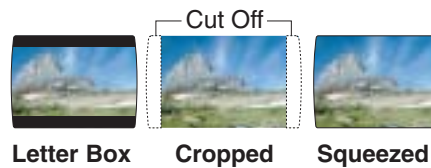
Aspect Ratio

Use to choose the screen format. When you watch TV with a wide (16:9) aspect ratio at 480i or 480p mode output format, you can choose Set By Program, Letter Box, Cropped, or Squeezed. When you watch TV with a normal (4:3) aspect ratio at 720p or 1080i mode output format, you can choose Normal, Wide, Spectacle, Zoom1, or Zoom2. When you watch TV with a wide (16:9) aspect ratio at 720p or 1080i mode output format, you can choose Set By Program, Standard, Expansion, Shrink, or Cinema Zoom.

- 1** Press **MENU**.
The main menu appears.
- 2** Use **▲ / ▼** to select the **OPTION** menu then press **▶** or **⊙** (**SELECT**) to move to the second level.
- 3** Use **▲ / ▼** to select the **Aspect Ratio** option.
- 4** Press **▶** or **⊙** (**SELECT**) to move to the third level.
- 5** Use **▲ / ▼** to select an option then press **⊙** (**SELECT**) to confirm your selection.
- 6** Press **MENU** to return to the previous menu or press **EXIT** on the remote control to return to TV viewing.

Tip

You can also select other aspect ratios by repeatedly pressing **RATIO** on the remote control.



Notes

- “Set By Program” sets display format according to the input signal.
- “Cinema Zoom” shows Cinema-Scopic screen (2.35:1) magnified without distortion.
- If program format is Standard Definition (4:3) and the display format selected is 480i or 480p, you cannot change Aspect Ratio.

Option Menu Operation (Continued)



Menu Language

Select a language for the menus to appear in.

- 1** Press **MENU**.
The main menu appears.
- 2** Use **▲ / ▼** to select the **OPTION** menu then press **▶** or **⊙** (**SELECT**) to move to the second level.
- 3** Select the **Menu Language** option using **▲ / ▼** then press **⊙** (**SELECT**) or **▶**.
- 4** Select the desired language using **▲ / ▼** then press **⊙** (**SELECT**).
English, French, and Spanish are available.
- 5** Press **MENU** to return to the previous menu or press **EXIT** on the remote control to return to TV viewing.

Caption Menu Operation

Select a Closed Caption mode.

The caption language options are English, French, and Spanish. Use the menu to select a language. If the selected language is not available on the current program, the first available caption language for the program is displayed. If a user changes the channel and if the caption language, selected by user, is not present on the channel, the first available caption language for the program on the new channel is displayed.

Notes

- Digital Closed Captioning (Standard EIA /CEA 708) and Analog Closed Captioning (Standard EIA/CEA 608) will appear only if provided by the broadcaster.
- Captions do not display if Timeshift (Pause, Live TV/Playback), record icon or Progress Bar display appear on the TV screen. Press EXIT to make the icon or Progress Bar disappear – closed captioning is displayed again.



Caption Settings, General Operation

- 1** Press MENU.
The main menu appears.
- 2** Use ▲ / ▼ to select the CAPTION option then press ► or ◎ (SELECT) to move to the second level.
- 3** Use ▲ / ▼ to select the second menu option.
- 4** Use ► or ◎ (SELECT) to move to the third level.
- 5** Use ▲ / ▼ to select a Caption Option menu option.
DTV Caption Option requires an additional step; use ◀ / ▶ to select an option.
- 6** Press ◎ (SELECT) to confirm your selection.
- 7** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

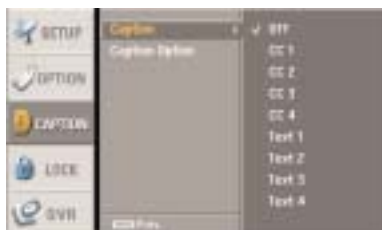
Tip

You can also turn the closed captioning feature on and off by pressing CC repeatedly on the remote control.

Caption Menu Operation (Continued)

Caption

Selects a language for Closed Caption display. Options are:



Menu for a picture without digital closed captioning.

If you watch programming with digital closed captions

- Off: Closed Caption is not displayed.
- English: English if available for the DTV caption.
- Spanish: Spanish if available for the DTV caption.
- French: French if available for the DTV caption.

If you watch programming without digital closed captions

Off: Closed Caption is not displayed.

CC1 (Caption1): CC1 is the primary caption service that synchronizes the captioning language with the sound, used by most broadcasters. The captioning is displayed in the same language as the program's dialog.

CC2 (Caption2): CC2 is the special non-synchronous caption service that does not need to be in sync with the sound and may provide simplified captioning, which is usually delayed. CC2 is rarely available and broadcasters use them only in special circumstances, such as when CC1 and CC3 are not available.

CC3 (Caption3): CC3 serves as an alternate captioning service channel. The captioning is often a secondary language translation such as French, Spanish, simplified English or displayed at a slower rate.

CC4 (Caption4): CC4 is another special non-synchronous caption service that does not need to be in sync with the sound and may provide simplified captioning, usually delayed. CC4 is rarely available and broadcasters use CC4 only in special circumstances, such as when CC1 and CC3 are not available.

Text1: Text1 is the primary text service used by broadcasters. Text1 usually displays information at the bottom screen and is used for a data service, generally not program related.

Text2-3-4: Text2-3-4 are text services used by broadcasters but are rarely available. Broadcasters use Text2-3-4 only in special circumstances, such as when Text1 is not available.



Menu for a picture with digital closed captioning.

Caption Menu Operation (Continued)

Caption Option

Customize closed captioning's visual appearance.

Style

Use caption feature defaults as provided by the program or customize captions appearance with the Custom menu options.

Set By Program: Default text provided by the broadcaster is shown when closed captions appear.

Custom: Customized text is shown when closed captions appear.

Size

Selects the font size for closed captions.

Standard: The standard text size is used for the caption display (15 pixel).

Large: The large text size is used for the caption display (21 pixel).

Small: The small text size is used for the caption display (11 pixel).

Font

Selects the font type for Closed Captions.

Text Color

Selects the font color for Closed Captions.

Text Opacity

Selects the font opacity for Closed Captions.

Solid: The text is solid (without any transparency).

Flash: The text blinks twice a second.

Translucent: The text is translucent.

Transparent: The text is transparent (In this case, whatever the color is, the color does not affect the caption display).

BG (Background) Color

Selects the background color for Closed Captions.

BG (Background) Opacity

Selects the background opacity for Closed Captions.

Solid: The text background color is solid (without any transparency).

Flash: The text background color blinks twice a second.

Translucent: The text background color is translucent.

Transparent: The text background color is transparent (In this case, whatever the background color is, the color does not affect the caption).

Edge Type

Selects the edge type for Closed Captions.

None: The text has no edge.

Raised: The text is raised.

Depressed: The text is depressed.

Uniform: The text has a uniform edge.

Left Shadow: The text has a left-shadow edge.

Right Shadow: The text has a right-shadow edge.

Edge Color

Selects the edge color for Closed Captions. (If the edge type is selected as None, or if the edge type is selected as Set By Program and the program sets the edge type as None, then the edge color does not have any effect on the caption display).



Lock (Parental Control) Menu Operation

Lock System

Sets up specific channels and ratings through blocking schemes. Activates or disables all of the Lock schemes previously set up. A password is required to gain access to the Lock menu. You can change the password by entering a new password twice. When the system is set to 'not blocked', the Block Channel and Program Rating features do not function and the program is displayed as it is received.



1 Press MENU.
The main menu appears.

2 Use ▲ / ▼ to select the LOCK then press ► or ● (SELECT) to move to the second level.

When you have not entered a password yet;

Enter "0000" password using the numbered buttons to create a personal 4-digit security password.

When you have already entered a password;

Enter the 4-digit password using the numbered buttons to confirm the personal 4-digit security password, then press ● (SELECT).

3 Use ▲ / ▼ to select the Lock System.

4 Press ► or ● (SELECT) to move to the third level.

5 Use ▲ / ▼ to select an option (On or Off) then press ● (SELECT) to confirm your selection.

6 Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Set Password

Creates or changes the password.



1 Follow Steps 1-2 as shown for the Lock System above.

2 Use ▲ / ▼ to select the Set Password option.

3 Press ► or ● (SELECT) to move to the third level.

4 Enter the new 4-digit password.

5 Enter exactly the same password again.

6 Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Lock (Parental Control) Menu Operation (Continued)



Block Ch. (Channel)

Blocks any channel that you do not want to watch or that you do not want your kids to watch. If you tune to a blocked channel, a black screen with a pop-up box will appear.

- 1** Follow Steps 1-2 as shown for the Lock System on page 38.
- 2** Use ▲ / ▼ to select the **Block Ch. (channel)**.
The channel editing screen appears.
- 3** Use ◀ / ▶ / ▲ / ▼ to move the highlight in the channel editing screen.
- 4** Toggle between **Blocked** or **Unblocked** by pressing Ⓞ (SELECT).
The option display shown at the top left will indicate if the highlighted channel is blocked or unblocked.
- 5** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Movie Rating

Blocks movies according to the movie ratings set up so that children cannot watch certain movies. You can set the ratings by blocking out all the movies with the ratings above a specified level. Keep in mind that the movie ratings apply only to movies shown on TV, not TV programs such as soap operas.



- 1** Follow Steps 1-2 as shown for the Lock System on page 38.
- 2** Use ▲ / ▼ to select the **Movie Rating** option.
- 3** Press ▶ or Ⓞ (SELECT) to move to the third level.
- 4** Use ▲ / ▼ to select a rating then press Ⓞ (SELECT) to confirm your selection.

All Block: All programs with a rating are blocked.

G (General Audiences): Content is not offensive to most viewers.

PG (Parental Guidance Suggested): Content is such that parents may not want their children to view the program.

PG-13 (Parental Guidance Suggested): Program is inappropriate for preteens, with a greater degree of offensive material than a PG rated program.

R (Restricted viewing): Not for children under age 17. Strong elements of sex and/or violence.

NC-17 (Restricted Viewing): Not for children under age 17 under any circumstances. Strong sexual content.

X (Hard Core Films): Same as NC-17 rating.

- 5** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Lock (Parental Control) Menu Operation (Continued)

TV Rating-Children

Restricts access to certain children's TV programs based on the ratings limit specified. This rating applies only to TV programs for children. Unless you block TV programs intended for mature audiences on the TV Rating – General menu, your children may watch those programs.



1 Follow Steps 1-2 as shown for the Lock System on page 38.

2 Use ▲ / ▼ to select the TV Rating-Children.

3 Press ► or ○ (SELECT) to move to the third level.

4 Use ▲ / ▼ to select the Age or Fantasy Violence option then press ► or ○ (SELECT).

Age: Selection applies regardless of content category of rating.

Fantasy Violence: Selection applies if TV programs include rating for Fantasy Violence.

5 Use ▲ / ▼ to select a rating then press ○ (SELECT) to confirm your selection.

All Block: All programs with a rating are blocked.

TV-Y: All Children. This program is designed to be appropriate for all children.

TV-Y7: Directed to Older Children. This program is designed for children age 7 and above.

6 Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.



Lock (Parental Control) Menu Operation (Continued)

TV Rating-General

Blocks TV programs that you and your family do not wish to watch, based on the rating scheme set up.



1 Follow Steps 1-2 as shown for the Lock System on page 38.

2 Use ▲ / ▼ to select the TV Rating-Children option.

3 Press ► or ● (SELECT) to move to the third level.

4 Use ▲ / ▼ to select the Age, Dialogue, Language, Sex, or Violence option then press ► or ● (SELECT).

Age: Selection applies regardless of content category of rating.

Dialogue: Selection applies if TV program has a rating for Dialogue.

Language: Selection applies if TV program has a rating for Language.

Sex: Selection applies if TV program has a rating for Sex scenes..

Violence: Selection applies if TV program has a rating for Violence.



5 Use ▲ / ▼ to select a rating then press ● (SELECT) to confirm your selection.

All Block: All programs with a rating are blocked.

TV-Y: All Children. This program is designed to be appropriate for all children.

TV-Y7: Directed to Older Children. This program is designed for children age 7 and above.

TV-G: General Audience. Most parents would find this program suitable for all ages.

TV-PG: Parental Guidance Suggested. This program contains material that parents may find unsuitable for younger children.

TV-14: Parents Strongly Cautioned. This program contains some material that many parents would find unsuitable for children under 14 years of age.

TV-MA: Mature Audience Only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.



6 Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

Lock (Parental Control) Menu Operation (Continued)

Aux.Block

Restricts viewing access to external auxiliary sources.



- 1** Follow Steps 1-2 as shown for the Lock System.
- 2** Use ▲ / ▼ to select the Aux.Block option.
- 3** Press ► or ⊙ (SELECT) to move to the third level.
- 4** Use ▲ / ▼ to set the Aux.Block option (On or Off) then press ► or ⊙ (SELECT).
- 5** Press MENU to return to the previous menu or press EXIT on the remote control to return to TV viewing.

DVR Menu Operation

TV Guide On Screen™ system

The TV Guide On Screen EPG contains schedule and program information for all channels.

It also provides local over-the-air channels information including conventional digital channels.

Use the TV Guide On Screen EPG to find programs easily and conveniently. View schedule and descriptive program information for the channels.



Tip

You can also bring up the TV Guide On Screen EPG by pressing the TV GUIDE button on the remote control.

1 Press MENU.

The main menu appears.

2 Use ▲ / ▼ to select the DVR menu then press ► or ◎ (SELECT) to move to the second level.

3 Use ▲ / ▼ to select the TV Guide On Screen option.

4 Press ► or ◎ (SELECT) to display the TV Guide On Screen EPG.

5 Press EXIT to return to TV viewing.

Note

The information on the program guide and scheduled broadcast may differ depending on the TV station.

DVR Menu Operation (Continued)

Program List

The Program List shows the recorded programs etc. that have been stored on the HDD (Hard Disk Drive).

Program List Setting, General Operation



1 Press MENU.

The main menu appears.

2 Use ▲ / ▼ to select the DVR menu then press ► or ● (SELECT) to move to the second level.

3 Use ▲ / ▼ to select the Program List option.

4 Press ► or ● (SELECT) to display the Program List.

The Program List shows title of the program, date, and duration.

5 On the Program List menu, use ◀ / ▶ to select a program.

A series of snapshots of the selected program appear if the program remains highlighted.

6 Press ● (SELECT) to play the program or ▼ to display the menu.

The menu will be displayed as shown to the left.

PLAY: Plays back the selected program.

DELETE: Deletes the selected program.

TITLE: Inserts the program title.

You can insert a program title. Key in the title using ▲ / ▼ / ◀ / ▶ or ● (SELECT). Then choose "OK" then press ● (SELECT) to install the program title.

DETAIL: Shows detailed information about the program.

DVHS OUT: HDD content backup to DVHS.

7 Press EXIT or PROG.LIST button to remove the Program List.

Notes

- If the HD DVR finds a bad sector on the hard disk, one or all programs may be deleted from Program List.
- Total number of programs on the Program List can be up to 128.
- Duration may show "0" if recording is not done properly. (For example, insufficient disk space, no signal, incorrect program time, DVR error, etc.)



DVR Menu Operation (Continued)



HDD Format

Initializes the HDD (Hard Disk Drive): deletes all stored recorded contents.

- 1 Press MENU.**
The main menu appears.
- 2 Use ▲ / ▼ to choose the DVR menu then press ► or Ⓞ (SELECT) to move to the second level.**
- 3 Use ▲ / ▼ to choose the HDD Format option then press Ⓞ (SELECT) or ►.**
- 4 Choose HDD Format option and set (On or Off) using ▲ / ▼ then press Ⓞ (SELECT).**

Recording Quality

Sets the HD DVR's recording quality. Better recording quality shortens the recording time available and lower recording quality yields longer recording times.



- 1 Press MENU.**
The main menu appears.
- 2 Use ▲ / ▼ to choose the DVR menu then press ► or Ⓞ (SELECT) to move to the second level.**
- 3 Use ▲ / ▼ to choose the Record Quality option then press Ⓞ (SELECT) or ►.**
- 4 Choose the Record Quality option (Best, High, Medium, or Basic) using ▲ / ▼ then press Ⓞ (SELECT).**

Recording time by recording quality chart

Recording Quality	Recording Time (SD)
Best	About 24 hours
High	About 34 hours
Medium	About 60 hours
Basic	About 119 hours

Information Displays

Channel Banner Display



The Channel Banner appears whenever you tune to a new channel or press the **⊙** (SELECT) button on the remote control while watching a program.

1 Press **⊙** (SELECT) while watching a program.

The Channel Banner appears on the TV screen (Channel number, audio, station ID, and current time).

- The Channel Banner disappears automatically after a few seconds.

2 To remove the Channel Banner display, press **⊙** (SELECT) again or **EXIT**.

Note

Station ID and current time information is displayed only if it is made available from the broadcaster.



Program Information Display

The Program Information appears when you press the **INFO** button on the remote control while viewing a program.

1 Press **INFO** while watching a program.

The Program Information display appears on the TV screen.

2 To remove the Program Information display, press **INFO** again or **EXIT**.

Recording Setup Operation



Manual Recording

- 1** Select the desired channel with CH (+/-).
- 2** Press RECORD/EDIT once.
Recording will start. The menu will appear on the TV screen as illustrated at left.
- 3** Press ▲ / ▼ repeatedly to select the recording time length.
Each press of ▲ / ▼ button changes the recording duration in the sequence shown below.
No Limit → 30 min → 60 min → 90 min → 120 min → 180 min → 210 min → No Limit
Note
If you select the recording time length to No Limit, recording continues until you press STOP or HDD is full.
- 4** Press RECORD/EDIT again.
The elapsed recording time indicator appears on screen. Press EXIT to remove the indicator.
- 5** Press STOP to stop recording. Or as the preset recording duration is reached, the HD DVR will automatically stop recording.

Playback Operation



Playback

Select a program in the Program List then start playback. (Refer to “Program List Setting, General Operation” on page 44 to see more detailed information.)

The Progress Bar display will appear on the screen.

Note

To play back a recorded program which is locked by a user, you must unlock the program from the Lock System Menu (Refer to page 38).



Scan

1. Press FF or REW during playback.
The HD DVR will go into SCAN mode.
2. Press FF or REW repeatedly to select the required speed:
X2, X5, X20, X50, X300 (forward) or X2, X5, X20, X50, X300 (backward).
3. To exit SCAN mode, press PLAY/SLOW.

Note

Pressing and holding the button (FF or REW), increases the speed as indicated above.



Still Picture and Frame-by-Frame Advance

1. Press PAUSE during playback.
The HD DVR will go into PAUSE mode and display still picture.
2. You can advance the picture frame-by-frame by pressing PAUSE/STEP repeatedly on the remote control.
3. To exit PAUSE mode, press PLAY/SLOW.



Slow Motion

1. Press PLAY/SLOW during playback.
The player will go into SLOW mode.
2. To exit SLOW mode, press PLAY/SLOW.



Jump to Start

Press START during playback. Then program playback begins from the very start.



Jump to End

Press END during playback. Then the playback jumps to the very end of the recorded program.



Repeat

1. Press REPEAT at the beginning point during playback.
“↑” appears on the Progress Bar display to indicate the start position.
2. Press REPEAT at another point during playback.
To indicate the stop position, “↑” appears on the Progress Bar display.
3. To cancel the sequence, press REPEAT or END.



Stop

Press STOP during playback to return to the current broadcast.

Timeshift (Pause, Live TV/Playback) Setup and Operation



You can store a program in the HDD storage cache temporarily. If you use timeshift function a second time, previously cached timeshift segment will be deleted.

1 Press **TIMESHIFT** while watching a TV program.

The Progress Bar display appears on the screen as shown on the left. The Progress Bar changes to timeshift icon after 40 seconds.

1. Indicates playback mode.
2. Indicates current Timeshift position.
3. Indicates timeshift start time.
4. Indicates Timeshift elapsed time.
5. Indicates the bookmark point.
6. Indicates the time that is one hour from Timeshift start time.

2 Press **STOP** to exit Timeshift function.

The current broadcast is displayed on the screen.

Notes

- If disk space is insufficient during a Timeshift operation, the oldest Timeshift section of the cache will be incrementally deleted.
- To save disk space, a digital program that has no signal can't be stored.
- A blocked channel can be recorded but a black screen is shown during recording.

Tips

- You can use trick play functions (Slow, Scan, etc.). Refer to Playback Operation on page 48.
- You can edit the cached clip during Timeshift to retain the program on the HDD. Refer to Clip Record on 50.

Bookmark

During Timeshift, you can bookmark a point and play it back automatically when you press the **TIMESHIFT** button.

1 Press **TIMESHIFT** to bookmark the point you want to return to later.

The Progress Bar display for Timeshift appears as shown at left on the screen. The first bookmark appears blue and the second one appears green.

The Progress Bar display for timeshift changes to Timeshift icon after 40 seconds.

2 Press **TIMESHIFT** to move the bookmark.

The bookmark point is moved to the newly marked position.

3 During Timeshift, press **BLUE** or **GREEN** to recall the bookmark.

Note

The bookmark function is also available on regular playback.



Bookmark point

Clip Edit

You can edit recorded programs on the HDD and save them.



1 Press RECORD/EDIT at the starting point of the section you want to edit.

Progress of the clip being edited is indicated in Blue on the progress bar.

2 Press RECORD/EDIT at the ending point of the section you want to edit.

Normal playback resumes.

3 Repeat steps 1 and 2 to make Clip Edits of a program.

Up to 10 distinct clips may be created

4 Press STOP to cease editing.

A dialog box appears as shown to the left, your options are:

Do Edit: Only the selected Clips saved are stored on the HDD (Hard Disk Drive), other sections are discarded.

Undo Edit: Clip edits are deleted and you return to the previous viewing mode.

Cancel: The dialog box disappears and playback resumes.



Notes

- Clip edits for playback of a program temporarily cached are not possible.
- Only the selected sections are saved and other sections are discarded.
- If you want to stop Clip editing, press the STOP button. If you press POWER to stop Clip editing, the program may not be saved.
- Clip edits cannot be made for sections lasting less than 10 seconds.

Clip Record

You can edit during Timeshift to store the program on the HDD (Hard Disk Drive).



1 During Timeshift, press RECORD/EDIT at the starting point of the section you want to edit.

Progress of the edit is indicated in Red on the Progress Bar.

2 Press RECORD/EDIT at the ending point of the section you want to edit.

Normal playback continues.

3 Repeat steps 1 and 2 to make several Clip Records of a program.

4 Press STOP to stop Timeshift.

The current broadcasting is displayed on screen.

Notes

- Selected sections are recorded and other sections remain in timeshift cache.
- If you want to stop Clip recording, press the STOP button. If you press POWER to stop Clip recording, the program may not be recorded on the HDD.
- Clip records cannot be made for sections lasting less than 10 seconds.

Smart Skip (+/-), Video Synopsis, Drag & Play

The HD DVR provides intelligent video navigation & video summary. It uses video segmentation technology based on scene monitoring and scene change detection algorithm with an average accuracy of 95%.

Smart Skip (+/-)

Smart Skip is a trick play mode, providing intelligent scene selection in either skip replay or skip forward modes. Instead of searching with fixed time methods, smart skip searches for active scene clusters then jumps to the first scene in the next available cluster of scenes. This is more meaningful to viewers than jumping to a more static scene (anchor person scene from a news broadcast, etc).

During Playback/Timeshift, press SKIP+ at the starting point of the section you want to watch. Press SKIP- if you want to go backward.

Note

Pressing SKIP+ afterward pressing SKIP- does not guarantee coming back to the same scene.

Video Synopsis

Video Synopsis is a video summary based on video scene changes, which provides video searching by highlight: meaningful scenes are played for 1~4 seconds in every indexed group of scenes (touchdown scene in football, etc).



1 During Playback/Timeshift, press **SYNOPSIS** at the starting point of the section you want the unit to create a synopsis for.

The HD DVR will go into SYNOPSIS mode.

2 Press **SYNOPSIS** repeatedly to select the required speed:

Normal Synopsis: 4~5 times faster than normal playback.

Fast Synopsis: 7 times faster than normal playback.

Dynamic Search: 15 times faster than normal playback.

3 To exit SYNOPSIS mode, press **PLAY/SLOW**.

Drag & Play

Use drag & play to skip some fixed time intervals, drag & play will help. Current playback position keeps moving while ◀/▶ is pressed. Playback starts at the position when ◀/▶ is released.



During Playback/Timeshift, press ◀/▶ and release at the starting point of the section you want to watch.

IEEE-1394 Devices

The list of devices appears if there are two or more IEEE-1394 devices connected and enables you to control each device from the on-screen menu.

List of Devices



1 Press 1394 button.

The list of devices appears if two IEEE-1394 devices are connected, otherwise the control panel for the connected device appears.

Note

See page 22 for a list of compatible IEEE-1394 devices

2 Use ◀/▶ to select a device then press Ⓞ (SELECT).

The control panel for the selected device appears.

Control Panel

Use the control panel to operate the selected device.

1 Use ▲/▼/◀/▶ to move the highlight in the control panel menu.

2 Press Ⓞ (SELECT) to execute the selected function, 1394 to return to the list, or EXIT on the remote control to return to TV viewing.



Notes

- While IEEE-1394 Control Panel is on screen or IEEE-1394 devices are operating, buttons at the bottom of the remote control including PLAY, REC, PAUSE, STOP, FF, and REW control IEEE-1394 devices.
- Other buttons except VOL (+/-), MUTE, RATIO, and MENU do not work while the control panel is on the screen.
- You can play, record, pause, stop, scan forward/backward, skip forward/backward, power on/off IEEE-1394 devices using the Control Panel.
- You can record the current program to DVHS.
- You cannot record the current program to MV Camcorder.
- You cannot record from the camera mode of the MV Camcorder to the HDD of the HD DVR.
- The HD DVR does not support the memory mode of the MV Camcorder.
- You can save contents on the HDD only to DVHS, not MV Camcorder.
- While saving contents on the HDD to DVHS, you can watch live broadcast programs, not recorded programs.

IEEE-1394 Devices (Continued)



Record contents from DVHS to the HDD (Hard Drive)

- 1 Use ▲/▼/◀/▶ to choose ► (PLAY) then press Ⓞ (SELECT) to play a DVHS tape.
- 2 Use ▲/▼/◀/▶ to choose DVR (RECORD) then press Ⓞ (SELECT) to start the HD DVR recording the playback content from the DVHS device.

Tips

- You can turn the DVHS on/off and play back, record, pause, stop, and scan forward/backward from the control panel.
- You can record instantly to the DVHS,
- You can archive contents on the HDD to the DVHS using the Program List,
- You can move contents on the DVHS to HDD.
- The HD DVR provides copy protection using DTCP.

Control MV Camcorder

- 1 Use ▲/▼/◀/▶ to move the highlight in the control panel menu and choose the MV Camcorder.
- 2 Press Ⓞ (SELECT) to execute the selected function, 1394 to return to the list, or EXIT on the remote control to return to TV viewing.

Tips

- The MV camcorder can play back, pause, stop, and scan forward/backward using the control panel.
- You can save recorded A/V stream in the MV Camcorder to HDD.



TV Guide On Screen™ system

Overview and Setup

Setting up your HD DVR to receive TV Guide On Screen system Program Listings.

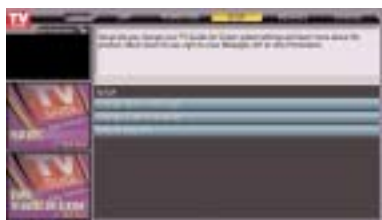
Overview

The TV Guide On Screen system enables you to program your HD DVR to:

Watch - the HD DVR will tune to the program automatically as it is aired. (If necessary, will turn the HD DVR on.)

Record - the HD DVR will tune the cable box to the channel of the program and make the recording.

The feature also enables you to view on-screen the current program you are watching as well as to browse other channels to see what else is being broadcast. Advanced features offer you additional options which are available when the Program Listings is on the TV screen, like VCR Plus+ recording using the program's PlusCode programming number.



Get Information Ready for the EZ Setup

Prior to the TV Guide On Screen system set up, and the Cable box tests, you will need to have the following information handy:

- Your Zip or Postal Code.
- Whether you receive programs over-the-air, or subscribe to a cable service.
- Brand name on your cable box, if you have a cable box.
- Cable Box output channel number.
(Usually printed on the back of the cable box. If output channel number is not there see your cable box owner's manual or call your cable service provider for the number.)

Run TV Guide On Screen system Setup

With the Setup option highlighted, press **⊙** (SELECT). Answer the questions with the information you wrote in the "Write in Setup Information" box above, this will be used for the Cable Box tests.

Cable Box Setup and Test

This test determines if the HD DVR can control your Cable Box. Follow the on-screen instructions to set up your Cable Box.

Once the tests are complete, you can use the TV Guide On Screen system to view, schedule to watch, and schedule to record, programs listed in the Program Listings.

Note

Be sure cable box controller for the Cable Box is in position and connected, see "Cable Box Connections" on pages 19-21.

Overview of downloads

The information for the TV Guide On Screen system is downloaded from the Antenna or Cable sources. To download information, it is necessary to set up the TV Guide On Screen system in the following manner:

1. Bring up the Setup Menu

The first time you set up the HD DVR, the Setup menu is displayed automatically. (See Figure 1)

After initial setup, you can bring up the Setup menu manually. Follow the instructions on the screen.

1-a. Downloading with an Antenna.

Follow the instructions:

“Do you have cable service?” select “No”.

“Do you have a cable box?” select “No”.

1-b. Downloading with Cable.

Follow the instructions: (See Figure 2)

“Do you have cable service?” select “Yes”.

* If you have cable box.

“Do you have a cable box?” select “Yes”. Otherwise “No”.

* If you have a cable box the cable box configuration menu appears:

Select your cable box brand from the list.

Select cable box output channel: 2, 3, 4, VIDEO 1/AUX (you need to check your cable box hardware configuration). Be sure that the HD DVR and your cable box are linked using the cable box controller cable.



Figure 1



Figure 2

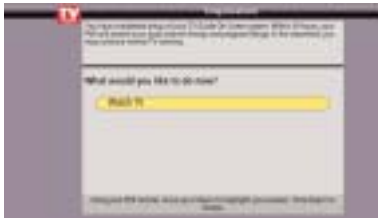


Figure 3

Note

In this configuration setup, the Cable box must be ON and the HD DVR OFF for the TV Guide On Screen system to receive information.

2. Finally, the Setup Complete display appears.

Press **⊙** (SELECT) to leave the TV Guide On Screen system setup menu. (See figure 3)

3. Select Exit option to Quit. (See figure 3)

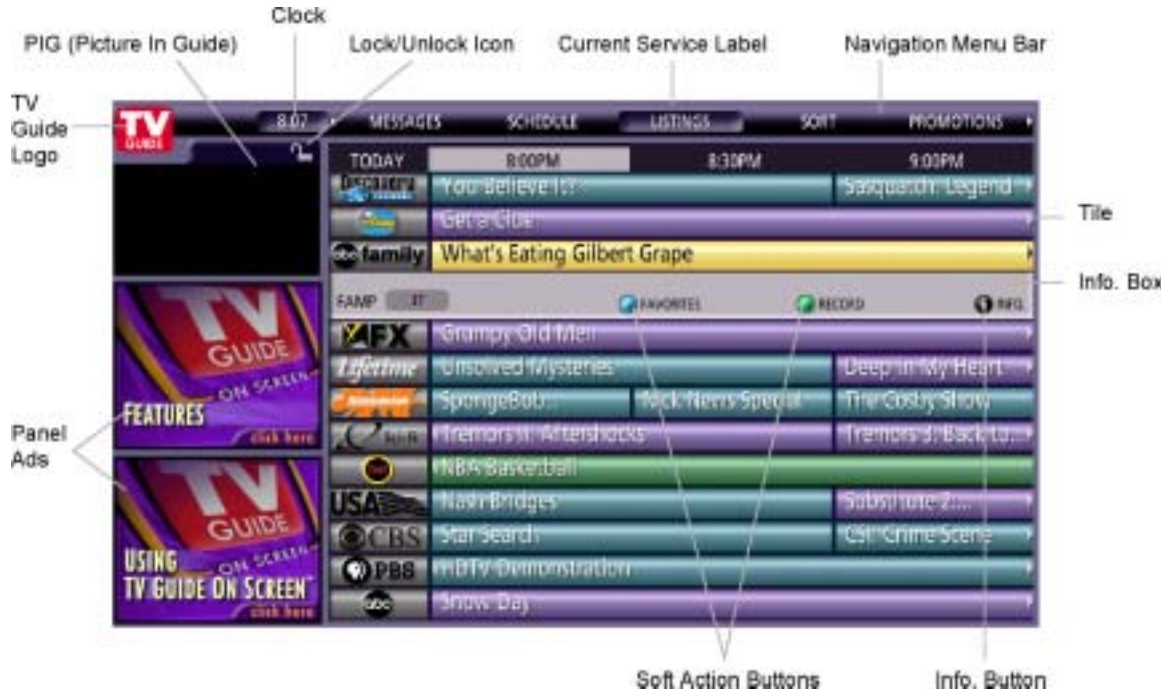
Note

TV Guide On Screen system's program listings will normally be available within 24 hours of initial setup.

TV Guide On Screen™ system

Grid Guide Layout

Explains program listings menu features in TV Guide On Screen EPG.



PIG (Picture-in-Guide)

Live video of selected program, while user is scrolling the Program Listings. Click TV GUIDE to place this program on TV screen and exit Listings. Picture in window is locked during timeshift. Otherwise, while user scrolls other programs in Listings, user can see the video of the newly selected program on the Listings (assuming the program is currently being broadcast).

Panel Ads

Current or Upcoming Program Ads: Displays Ads for current and upcoming programs. You can choose to watch or record the programs shown here. Highlight this box, then press BLUE to Watch, or GREEN to Record the program.

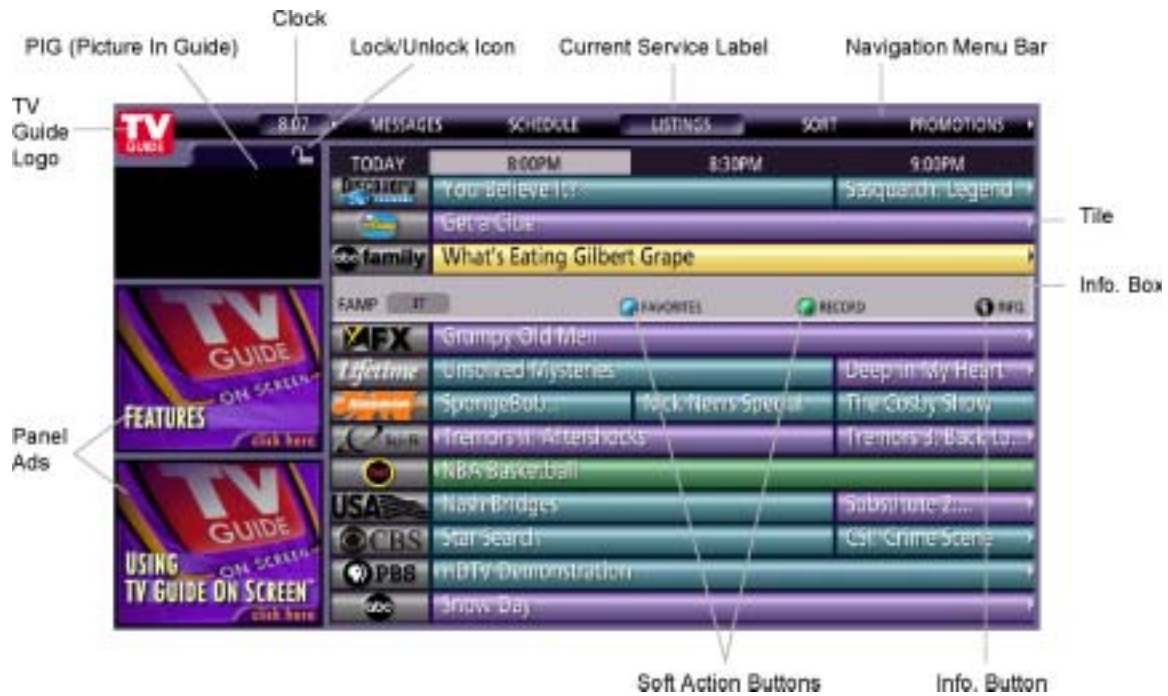
Interactive Panel / Ads: Displays information on various subjects. If additional information is available, press left cursor arrow and it will be displayed. Press Right arrow to return to guide.

Info Box

With a program highlighted, shows: Title of program; Gives a short description; Start time; Program duration; Channel number; Call letters of the channel; Indicates by displaying icons, if captions are present; Audio available; and Parental Control Ratings.

With a program highlighted, press INFO to display the program's VCR Plus+ PlusCode programming number, (if provided) and the channel's program lineup. Press INFO again to return to the program grid.

Grid Guide Layout (Continued)



Navigation Menu Bar

Displays services and menus (Listings options) available by first highlighting the word LISTINGS, then pressing the right arrow to scroll through and access the additional options: LISTINGS, SORT, PROMOTIONS, SETUP, MESSAGES, and SCHEDULE. (See page 58 for descriptions of the Menu Bar options.)

- LISTINGS** – Displays program listings by channel and time.
- SORT** – Displays program listing by category for example, Sports, Movies, etc.
- PROMOTIONS** – Displays promotions currently stored.
- SETUP** – Use to change TV Guide On Screen system Setup, Zip or Postal Code, Cable Box settings.
- MESSAGES** – Displays a list of messages sent to the TV Guide On Screen system.
- SCHEDULE** – Shows date, title, and start time of the programs that are scheduled to be watched or recorded. Also allows the user to delete any programs, and make changes to the recording schedule from Once to Daily, or Weekly.

Tile

Shows listing of current programs with channel icons, including time of day to Watch or Record. Also shows last channel viewed. Channels can be turned on or off with the Editor option located on the Menu Bar.

Soft Action Buttons

FAVORITES: Sets up the HD DVR to automatically tune to a program as it is broadcast. Press BLUE = Watch.
RECORD: Automatically sets up the HD DVR to record a program when it is broadcast. Press GREEN = Record.

TV Guide On Screen™ system

FAVORITES/RECORD in LISTINGS

Schedules programs to be Watched or Recorded using the LISTINGS menu.



Note

- You must first set up the TV Guide On Screen system before you can schedule programs to be watched or recorded, see TV Guide On Screen system Setup and Overview page.
- After setup: The HD DVR must be turned Off to receive TV Guide On Screen system's information updates. Cable Box (if you have one) should be left On.

1 Press TV GUIDE to place LISTINGS on TV screen. (Follow on-screen instructions.)

2 Use the Up/Down/Left/Right arrows to pick a program on the LISTINGS you want to watch/record.

A Watch: Press BLUE to schedule the program to be watched.

B Record: Press GREEN to schedule the program to be recorded.

C Press VCR Plus+ to go to the VCR Plus+ recording menu.

3 Press TV GUIDE to return to TV viewing.

Note

If the cable box is turned OFF, then the TV Guide On Screen system will not receive data.

Glossary

LISTINGS: Listings for up to 7 days of the programs scheduled to be broadcast in your area.

FAVORITES: HD DVR will tune to program as it is broadcast.

RECORD: Program will be recorded as it is broadcast automatically.

VCR Plus+ RECORDING: Recording using PlusCode programming numbers, usually listed with programs in Listings. Access by pressing INFO.

VCR Plus+ Recording

Schedules programs to be Watched or Recorded using the Schedule menu.



Note

- You must first set up the TV Guide On Screen system before you can schedule programs to be watched or recorded, see TV Guide On Screen system Setup and Overview page.
- After setup: The HD DVR must be turned Off to receive TV Guide On Screen system's information updates. Your Cable Box (if you have one) should be left On.

1 Press VCR Plus+.

- A Record programs using PlusCode program numbers. (With a program highlighted on the Listings, pressing INFO shows the program's PlusCode programming number, if provided.)
- B Record using date and time.



2 Press TV GUIDE to return to TV viewing.

Note

If the cable box is turned OFF, then the TV Guide On Screen system will not receive data. Leave the cable box on.

On/Off Setup

Each time you turn your HD DVR on, the TV Guide On Screen system's program listings display appears on the screen automatically. To remove TV Guide On Screen system LISTINGS, press EXIT or TV GUIDE.

Note

TV Guide On Screen system's LISTINGS Setup:

As the HD DVR is turned on, you can choose to show or not show the TV Guide On Screen system's listings

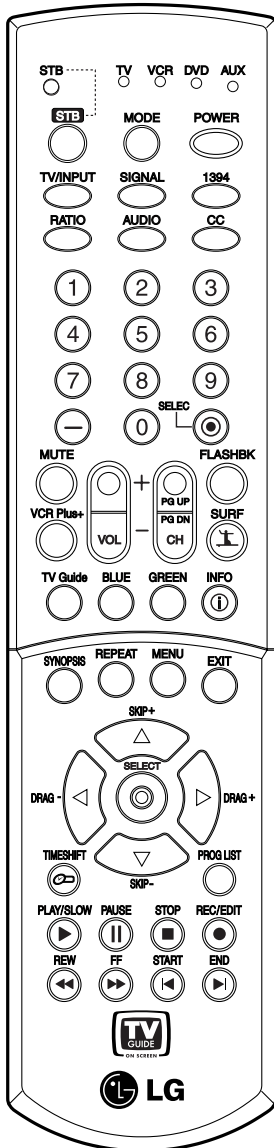
After the TV Guide On Screen system is set up, you can change the display on/off option so that when the HD DVR is turned on, the TV Guide On Screen system's LISTINGS will not automatically appear. See below.

TV Guide On Screen system's LISTING auto display: On/Off menu in the SETUP menu.

Select:

- On:** When the HD DVR is turned on, TV Guide On Screen system's program listings display will appear on the screen.
- Off:** When the HD DVR is turned on, TV Guide On Screen system's program listings display will not appear on the screen.

Programming the Remote Control to Operate Other Devices



The HD DVR remote control is a multi-brand universal remote control that can be programmed to operate most remote-controllable devices from other manufacturers.

Note

The remote control may not be able to control all models of other brands.

1 Test your remote control.

To find out whether your remote control can operate a device without programming, turn on the device such as a VCR and select the corresponding mode (VCR) using MODE on the remote control while pointing at the device. Use POWER and CH +/- buttons to see if the device responds properly. If not, the remote control mode needs to be programmed to operate the device.

2 Turn on the device to be programmed. Then select the corresponding mode (VCR, AUX, TV, DVD or STB) with the MODE button on the remote control.

3 Press POWER and MUTE buttons simultaneously.

The remote control is now ready to program a code for the device.

4 There are two ways to find the correct code for the device.

First, if you press CH + buttons repeatedly, the codes will change one at a time. If the right code is found, the device will turn off.

Second, enter the code number using the number buttons on the remote control. Code numbers for various device can be found on the following pages. If the code is correct, the device will turn off.

5 Press EXIT button to store the programming code.

6 Test the remote control functions to see if the device responds properly. If not, repeat from step 2 to step 6 above.

Remote Control Codes for Other Devices

TV Codes

Brand	Code
Akai	146 006
Amark	112 143
Ampro	167 073
Blaupunkt	088
Candle	002 003 004 006
Capehart	058
Citizen	002 003 004 043 101 103 006 143
Classic	043
Concerto	004
Contec	039 043 050 051
Coronado	143
Craig	043 054
Crown	043 143
Daewoo	004 016 017 043 044 055 071 076 103 107 111 114 117 120 123 125 127 128 136 143
Daytron	116 143 004
Dynasty	043
Electrohome	077 143 024
Emerson	028 048 043 155 005 096 047 116 153 151 050 004 006 051 143 154
Fisher	007 057
Funai	028 043
Futuretech	043
General Electric	160 144 165 073 130 008 009 034 056 074 116 155 091 004 006 161
Hall Mark	116 004
Hitachi	011 163 166 158 143 004 010 012 023 075 006 009 041
Inifinity	164
Inkel	129
JBL	164
J.C Penny	008 030 065 160 004 024 143 009 156 006 101
Jensen	013
JVC	038 083 145 034 070
KEC	043
Kloss	002 059
KMC	143
KTV	043 006 143 154
LG (Goldstar)	102 106 110 112 113 116 119 122 127 137 143 001 004
Lodgenet	072
Logik	072
Luxman	004
LXI	166 007 015 164 160 081 052
Magnavox	164 059 003 060 061 063 064 160 004 143 127 006 022

Brand	Code
Marantz	006 164 077
Matsui	004 164
Memorex	007 072 116 004
Metz	088
MGA	004 028 042 006 049 077 116 024
Minerva	088
Mitsubishi	109 024 124 006 004 040 116 146 028 042
MTC	101 002 004 006
Nikei	043
OnKing	043
Onwa	043
Optonica	019 081
Panasonic	034 080 092 056 164
Philco	003 024 056 059 060 063 064 164 004 143 006 127 143
Philips	164 038 070 093 003 004 143 059 160 005 006
Pioneer	135 025 023 006 018 116 027 176
Portland	004 143
Proscan	144 160 161 165 167
Proton	116 131 143 058 171 004 173
Quasar	034 092 056
Radio Shack	019 043 047 116 127 143
RCA	160 161 165 065 156 144 006 004 023 024 056 074 152
Realistic	007 019 043 047
Runco	168 169
Sampo	058 116 004 006
Samsung	050 089 101 105 113 116 127 133 137 143 160 004
Sanyo	166 007 057 082 020 053 021 033 039
Scott	028 043 116 004 048 143
Sears	015 030 004 007 028 057 143 094 160 116 082 101
Siemens	088
Singnature	072
Sony	070 147 126 085 139 041 079 185
Soundesign	028 003 043 116 004
Spectricon	112
SSS	004 043
Super Macy	002
Sylvania	003 059 060 063 064 164 044 160 116 127 140 004 006
Tandy	081
Tatung	056 062
Technics	084 034 080

Brand	Code
Techwood	004
Teknika	002 003 004 024 028 043 072 101 143 031 077 103 006
Telefunken	037 046 086 087
Telerent	072
TMK	004 116
Toshiba	015 138 030 007 040 062 101 051
Totevision	143
Universal	008 009
Video Concepts	146
Vidtech	004 116
Wards	004 008 009 019 028 060 061 063 064 072 074 116 143 164
Yamaha	004 006
York	116 004
Yupiteru	043
Zenith	001 072 073 095 157 103 102 106 110 112 113 116 119 122 127 137 143 001 004
Zonda	112

VCR Codes

Brand	Code
Aiwa	034
Akai	146 043 046 124 125 016
Ampro	072
Audio dynamics	012 023 039 043
Broksonic	035 037 129
Canon	028 031 033
Capehart	108
Craig	003 040 135
Curtis Mathes	031 033 041
Daewoo	005 007 010 064 065 108 110 111 112 116 117 119
Daytron	108
DBX	012 023 039 043
Dynatech	034 053
Electrohome	059
Emerson	006 029 035 025 027 034 036 037 046 101 129 131 138 017 031 153
Fisher	003 008 009 010
Funai	034
General Electric	031 072 144 147 033 063 107 109
Go Video	132 136
Harman Kardon	012 045
Hitachi	004 026 034 043 150 063 137 018
Instant Replay	031 033
JCL	031 033
J.C Penny	012 013 015 066 040 033 101
Jensen	043
LG(Goldstar)	001 012 013 020 101 106 114 123

Remote Control Codes for Other Devices (Continued)

VCR Codes

Brand	Code
JVC	048 043 130 150 050 055 060 012 031 033 152
Kenwood	014 043 048 039 034 047
Lloyd	034
LXI	034 101 013 014 003 009 017 106
Magin	040
Magnavox	067 031 034 041 033 068
Marantz	031 067 012 033 069
Marta	101
Matsui	027 030
MEI	031 033
Memorex	101 003 010 014 031 034 053 072 139 134 033 102
MGA	045 046 059
Minolta	013 020
Mitsubishi	059 061 151 046 013 020 045 049
MTC	034 040
Multi Tech	024 034
NEC	012 023 043 048 039
Nordmende	043
Optonica	053 054
Panasonic	066 070 083 145 133 140 074
Pentax	013 020 031 033 063
Philco	031 034 067
Philips	031 067 034 101 054 033 071
Pilot	101
Pioneer	021 048 013
Portland	108
Pulsar	072
Quartz	011 014
Quasar	033 066 075 145
RCA	013 020 033 041 034 062 063 107 109 140 144 145 147 040
Realistic	003 008 010 014 031 033 034 040 053 054 101
Rico	058
Runco	148
Salora	014
Samsung	032 040 102 104 105 107 109 112 113 115 120 122 125
Sansui	022 043 048 135
Sanyo	003 010 014 134 007 102
Scott	017 037 129 112 131
Sears	003 008 010 013 014 081 101 009 020 031 042 017 073

Brand	Code
Sharp	149 031 054
Shintom	024
Sony	009 056 057 058 077 003 149 052 076 031 078
Soundesign	034
STS	013
Sylvania	031 059 033 034 067
Symphonic	034
Tandy	010 034
Teac	034 039 043
Technics	031 033 070
Teknika	031 019 033 034 101
Thomas	034
TMK	006
Toshiba	112 131 008 047 059 082 042 013
Totevision	040 101
Unitech	040
Video Research	012
Video Concepts	012 046 034
Videonsonic	040
Wards	013 024 031 034 040 053 054 003 017 033 131
Yamaha	012 043 034 039
Zenith	001 072 080 056 048 034 101 058 012 013 020 106 114 123

DVD Codes

Brand	Code
JVC	012
LG (Goldstar)	001 010 016 025
Mitsubishi	002
Pioneer	004 026
Sony	007
Toshiba	019 008
Zenith	010 016 025 001

AUX (AUDIO) Codes

Brand	Code
Hitachi	010
JVC	006 039 049 050
KENWOOD	001 013 029 031 044
LG (Goldstar)	005
Luxman	017
Marantz	002 021 028 030 032 035
NAD	014
ONKYO	008 009 025 040 041
Optimus	011 013 022
Panasonic	003 015 036 046
Quasar	003 036
RCA	004
Sharp	013 029 043 045
Sherwood	012 019
Sony	027 034 038 048 053

Brand	Code
Toshia	042
Victor	006 039

AUX (CD) Codes

Brand	Code
Adc	104
Aiwa	149 178 189 202 212
Akai	134 165 200
Denon	101 190 221 222 223
Emerson	133 136 152 166 175
Marantz	129 135 141 159 224 225 226
Fisher	113 122 138 140 168
GE	209
Hitachi	133 166
JVC	117 196 227 228
KENWOOD	105 110 113 118 144 154 155 198 200 216 217
Luxman	108 123 153 173
Magnavox	127 135 172 179 180
Mcs	111 147 156 169
Mitsubishi	120 179 229 230 231
Onkyo	125 126 130 131 213 215 232
Optimus	100 107 110 124 139 140 145 146 162 164 165 170 163
Panasonic	106 151 176 184 203 219 233
Philips	127 135 195 199 237
Pioneer	107 124 167 171 179 187 191 205 206 207
Quasar	106 176
Radio shack	186 188
Sanyo	121 140 158 168
Sears	147
Sharp	110 141 150 181 200 204 210 150 217
Sherwood	102 115 116 128 141 193
Sony	100 142 168 174 182 183 192 208 234 235 236
Technics	106 148 151 176 184 203 214 218
Teac	103 112 132 141 160 161 177 185 161 197 201
Yamaha	109 119 137 143 194 211

STB Codes

Brand	Code
LG	001, 002
Zenith	001, 002

Troubleshooting

Check the following for a possible cause of a problem before contacting service.

Symptom	Possible Solution(s)
HD DVR does not turn on.	<ul style="list-style-type: none"> ● Plug the power cord into a wall power outlet securely.
Snowy picture and unclear sound.	<ul style="list-style-type: none"> ● Check your antenna input or location. (pages 11, 29)
No picture.	<ul style="list-style-type: none"> ● Make sure the correct video display format is selected. (page 23) ● If the HD DVR is connected to your monitor or TV via the VIDEO OUT jack on the back panel, the display format must be set to 480i. Otherwise, you may not be able to see a picture. (page 23) ● If the HD DVR is connected to your monitor or TV via the RGB port on the back panel, the display format must not be set to 480i. Otherwise, you may not be able to see a picture. (page 23) ● Make sure that the correct component type is selected. (page 23) ● If the HD DVR is connected to your monitor or TV via the YPbPr jacks on the back panel, OUTPUT SELECTION must be set to the YPbPr position. Otherwise, you will probably see an abnormal picture. (page 23) ● If the HD DVR is connected to your monitor or TV via the RGB port on the back panel, OUTPUT SELECTION must be set to the RGB position. Otherwise, you may not be able to see a picture. (page 23) ● Select EZ Channel Scan or Manual Channel Add functions if you have not already done so. (page 28) ● Check to make sure all the cables are installed correctly and that a proper source is selected on your TV. For example, Video 1 or 2. (page 30) ● The antenna signal strength may be low. Check the signal strength and adjust the antenna location and direction. (page 29) ● Due to copyright restrictions, you may not be able to view some high definition programs in the high definition format. (page 23) ● For more information about connections, please refer to connections. (pages 11-22)
Normal picture but no sound.	<ul style="list-style-type: none"> ● Check volume level setting. (page 26) ● Make sure the TV is not muted. (page 26) ● Check that the HD DVR audio cable is connected properly. (pages 12-15, 17)
Picture is distorted.	<ul style="list-style-type: none"> ● Make sure that proper video format is selected. (page 23) ● Make sure that proper aspect ratio is selected. (page 33) ● Make sure that video output is connected to the TV. (pages 11-15)
Available channels are missing.	<ul style="list-style-type: none"> ● You can find all the available channels by running the "EZ Scan" or using "Ch. Edit" in SETUP menu. (page 28)
You forgot your password.	<ul style="list-style-type: none"> ● Enter the master password "7777". (page 38)
The remote control does not work properly.	<ul style="list-style-type: none"> ● Use MODE or STB button to select STB operational mode. (page 8) ● Point the remote control at the remote sensor of the HD DVR. (pages 6, 10) ● Operate the remote control within 23 ft (7 m). (page 10) ● Remove the obstacle if something is blocking the remote sensor. (page 6) ● Replace the batteries with new ones. (page 10)
Won't record or display a channel properly.	<ul style="list-style-type: none"> ● Make sure TV Guide On Screen™ system Setup is performed. (page 54)
No picture or sound from cable box.	<ul style="list-style-type: none"> ● Cable box must be left on. (pages 19-21) ● Check if G-LINK cable is connected to G-LINK jack. (pages 19-21)
Doesn't display any programs In LISTINGS.	<ul style="list-style-type: none"> ● The HD DVR was not turned off long enough for data to be received. (page 58) ● Make sure cables are connected properly. (pages 19-21)
Won't tune to selected program.	<ul style="list-style-type: none"> ● Program may not be available or is not currently being broadcast.

Specifications

Television System		NTSC, DTV standard ATSC (1080i, 720p, 480p, 480i)
Channel Coverage		Terrestrial: 2-69, Cable: 1-125
Input/Output	ATSC/NTSC RF Inputs	Antenna (1), Cable TV (1) (NTSC, ATSC-8VSB over Terrestrial or Clear QAM over cable)
	IEEE-1394 Inputs	4 pin (i.LINK/IEEE 1394 standard) (2)
	VIDEO Inputs	1.0 Vp-p 75 Ω , sync negative, RCA jack (2)
	AUDIO Inputs	0 dBm more than 47 k Ω , RCA jack (L, R) (2)
	DVI Output	DVI-HDTV Out (1), DVI-D Single Link connector 1080i, 720p, 480p digital RGB
	Component Video Output	Component Out (1 Set), Standard RCA type Jack connectors 1080i, 720p, 480p, 480i YPbPr
	RGB Output	RGB Out (1), 15-pin connector
	S-Video Output	S-Video Out (1), 4-pin Mini-DIN 480i Y/C
	Video Output	Video Out (1), Standard RCA type Jack connector 480i Composite
	Digital Audio Output	Optical (Dolby AC-3 output)
	Analog Audio Output	Audio Out (2) (Fixed Output Level or Variable Output Level)
	Authorized Service Port	9-pin Serial Port (1)
	Hard Disk Drive	
Recording Time		About 12 hours (HD format), about 23-119 hours (SD format),
Dimension (W x H X D)		17 x 3 x 12.8 inches (430 x 76.5 x 326 mm)
Weight		7.7 lbs (3.5 kg)
Power Requirements		AC 120V, 60Hz
Power Consumption		35W
Environment	Humidity	30 to 99 percent non condensing
	Storage Temperature	-4 to 140 degrees Fahrenheit (-20 to 60 degrees Celsius)
	Operating Temperature	32 to 122 degrees Fahrenheit (0 to 50 degrees Celsius)
Accessories	Video cable	1
	Audio (L/R) cable	1
	Component (YPbPr) cable	1
	Remote Control	1
	Batteries (size AA)	2

- Design and specifications are subject to change without prior notice.

Notes

REFERENCE

Notes

Notes

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LG Electronics, Inc.
HDTV DIGITAL VIDEO RECORDER / RECEIVER LST-3410A
Limited Warranty - USA

This LG Electronics product, marketed by Zenith, will be repaired or replaced, at LG's option, if it proves to be defective in material or workmanship, under normal use, during the warranty period ("Warranty Period") listed below, effective from the date ("Date of Purchase") of original consumer purchase of the product. This warranty is good only to the original purchaser of the product and effective only when used in the United States, excluding U.S. Territories.

WARRANTY PERIOD: LABOR: 90 days from the Date of Purchase. PARTS: One Year from the Date of Purchase. * Parts replaced are warranted for the remaining portion of the original warranty period.	HOW SERVICE IS HANDLED: Call 1-800-243-0000 for instructions on getting the defective unit repaired or replaced. Please retain dated sales receipt and your box to return the unit to LG for repair or replacement. Shipping both ways will be paid by LG during the Warranty Period. After the Warranty Period, you pay inbound shipping charges and LG pays return shipping charges. Visit our website at: http://www.lgservice.com
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THIS LIMITED WARRANTY DOES NOT APPLY TO:

- Damages or operating problems that result from shipping, installation, adjustment of user controls, calibration, maintenance or failure to maintain, or separate system components; and
- Damages or operating problems that result from normal wear and tear, misuse, abuse, operation outside environmental specifications or contrary to the requirements or precautions in the Operating Guide, accident, lightning strikes or other natural causes, unauthorized modification or alteration, incorrect electrical current or voltage, reception problem caused by inadequate home antenna or faulty antenna connections, computer software, institutional or commercial use, or other causes not arising out of defect in material or workmanship.

Therefore, the cost of repair or replacement of such defective product shall be borne by the consumer.

CUSTOMER INTER-ACTIVE CENTER NUMBERS:

For nearest Authorized Service Center, Where to buy, Product Assistance, or Customer Assistance	Call 1-800-243-0000 (Monday - Friday 7 AM - 8PM CT and Saturday 8 AM - 5 PM CT) and select appropriate options from the menu. Or visit our website at http://www.lgservice.com
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